

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD**

**CENTRAL VALLEY REGION**

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**ORDER NO. R5-2007-XXXX**  
**NPDES NO. CA0079391**

**WASTE DISCHARGE REQUIREMENTS FOR THE  
CITY OF JACKSON  
WASTEWATER TREATMENT PLANT  
AMADOR COUNTY**

The following Discharger is subject to waste discharge requirements as set forth in this Order:

**Table 1. Discharger Information**

<b>Discharger</b>	City of Jackson
<b>Name of Facility</b>	Wastewater Treatment Plant
<b>Facility Address</b>	39 North Highway 49-88
	Jackson, CA 95642
	Amador County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a <b>minor</b> discharge.	

The discharge by the City of Jackson from the discharge point identified below is subject to waste discharge requirements as set forth in this Order:

**Table 2. Discharge Location**

<b>Discharge Point</b>	<b>Effluent Description</b>	<b>Discharge Point Latitude</b>	<b>Discharge Point Longitude</b>	<b>Receiving Water</b>
001	Tertiary treated municipal wastewater	38° 30' 28" N	120° 14' 04" W	Jackson Creek, tributary to Lake Amador

**Table 3. Administrative Information**

This Order was adopted by the Regional Water Quality Control Board on:	<b>&lt;Adoption Date&gt;</b>
This Order shall become effective on:	<b>50 days after adoption date of this Order</b>
This Order shall expire on:	<b>&lt;Expiration Date&gt;</b>
The Discharger shall file a Report of Waste Discharge in accordance with title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than:	<b>180 days prior to the Order expiration date</b>

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IT IS HEREBY ORDERED, that Order No. 5-00-173 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on **<Adoption Date>**.

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PAMELA C. CREEDON, Executive Officer

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## I. FACILITY INFORMATION

The following Discharger is subject to waste discharge requirements as set forth in this Order:

**Table 4. Facility Information**

<b>Discharger</b>	City of Jackson
<b>Name of Facility</b>	Wastewater Treatment Plant
<b>Facility Address</b>	39 North Highway 49-88
	Jackson, CA 95642
	Amador County
<b>Facility Contact, Title, and Phone</b>	Terry Coulter, Senior Operator, (209) 223-1607
<b>Mailing Address</b>	33 Broadway, Jackson, CA 95642
<b>Type of Facility</b>	Publicly Owned Treatment Works
<b>Facility Design Flow</b>	0.71 million gallons per day (mgd)

## II. FINDINGS

The California Regional Water Quality Control Board, Central Valley Region (hereinafter Regional Water Board), finds:

**A. Background.** The City of Jackson (hereinafter Discharger) is currently discharging pursuant to Order No. 5-00-173 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0079391. The Discharger submitted a Report of Waste Discharge, dated 7 December 2004, and applied for a NPDES permit renewal to discharge up to 0.71 mgd of treated wastewater from their Wastewater Treatment Plant, hereinafter Facility. The application was deemed complete on **16 January 2006**.

For the purposes of this Order, references to the “discharger” or “permittee” in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

**B. Facility Description.** The Discharger owns and operates a wastewater treatment plant. The treatment system consists of a mechanical screen and spiral augur with a washer compactor for screenings, two oxidation ditches (only one is used at a time), two secondary clarifiers (only one is used during the summer, both are used during the winter months), chlorine injection, one train of four single media sand filters, chlorine contact basins, and dechlorination. Solids are directed to an aerated holding tank for digestion, and then directed to a belt filter press. Solids are hauled off-site to a landfill for disposal. Wastewater is discharged from Discharge Point No. 001 (see table on cover page) to Jackson Creek, a water of the United States, and a tributary to Lake Amador within the Mokelumne River watershed. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

In addition to the discharge to the receiving water, the Discharger is continuing to investigate potential land disposal and/or distribution of reclaimed water for irrigation.

- C. Legal Authorities.** This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260).
- D. Background and Rationale for Requirements.** The Regional Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for Order requirements, is hereby incorporated into this Order and constitutes part of the Findings for this Order. Attachments A through E and G are also incorporated into this Order.
- E. California Environmental Quality Act (CEQA).** Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100-21177.
- F. Technology-based Effluent Limitations.** Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations (CFR)<sup>1</sup> require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at Part 133. A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet (Attachment F).
- G. Water Quality-based Effluent Limitations.** Section 301(b) of the CWA and section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. This Order contains requirements, expressed as a technology equivalence requirement, more stringent than secondary treatment requirements that are necessary to meet applicable water quality standards. The Regional Water Board has considered the factors listed in CWC Section 13241 in establishing these requirements. The rationale for these requirements, which consist of tertiary treatment or equivalent requirements, is discussed in the Fact Sheet.

Section 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and

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<sup>1</sup> All further statutory references are to title 40 of the Code of Federal Regulations unless otherwise indicated.

narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, water quality-based effluent limitations (WQBELs) must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed State criterion or policy interpreting the State's narrative criterion, supplemented with other relevant information, as provided in 40 CFR section 122.44(d)(1)(vi).

**H. Water Quality Control Plans.** The Regional Water Board adopted a *Water Quality Control Plan, Fourth Edition (Revised August 2006), for the Sacramento and San Joaquin River Basins* (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. The Basin Plan at page II-2.00 states that the “...*beneficial uses of any specifically identified water body generally apply to its tributary streams.*” The Basin Plan does not specifically identify beneficial uses for Jackson Creek, but does identify present uses for the Sacramento San Joaquin Delta, to which Jackson Creek, via Amador Lake, Dry Creek and the Mokelumne River, is tributary. These beneficial uses are as follows: municipal and domestic supply, agricultural supply for irrigation and stockwatering, industrial process supply and service supply, contact water recreation, other non-contact water recreation, warm freshwater aquatic habitat, cold freshwater aquatic habitat, warm and cold fish migration habitat, warm spawning habitat, wildlife habitat, and navigation.

In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Thus, as discussed in detail in the Fact Sheet, beneficial uses applicable to Jackson Creek, a tributary to the Delta via the Mokelumne River, Dry Creek, and Amador Lake are as follows:

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**Table 5. Basin Plan Beneficial Uses**

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Jackson Creek, a tributary to the Sacramento San Joaquin Delta, via Amador Lake, Dry Creek, and the Mokelumne River	<u>Existing:</u> Municipal and domestic supply (MUN); agricultural irrigation and stock watering (AGR); industrial process (PROC); industrial service supply (IND); contact water recreation (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); warm and cold migration of aquatic organisms (MIGR); warm spawning, reproduction, and/or early development (SPWN); wildlife habitat (WILD); and navigation (NAV). <u>Intermittent:</u> None. <u>Potential:</u> None.

The Basin Plan includes a list of Water Quality Limited Segments (WQLSs), which are defined as “...those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 CFR 130, et seq.).” The Basin Plan also states, “Additional treatment beyond minimum federal standards will be imposed on dischargers to WQLSs. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment.” Jackson Creek, Amador Lake, and the upper portion of Mokelumne River are not listed as impaired on the 303(d) list. However, the lower Mokelumne River is listed as impaired. The listing for the lower Mokelumne River is listed as a WQLS for copper and zinc in the 303(d) list of impaired water bodies. Effluent limitations for these constituents are included in this Order.

Requirements of this Order specifically implement the applicable Water Quality Control Plans.

- I. National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on 22 December 1992, and later amended it on 4 May 1995 and 9 November 1999. About forty criteria in the NTR applied in California. On 18 May 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on 13 February 2001. These rules contain water quality criteria for priority pollutants.
- J. State Implementation Policy.** On 2 March 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on 28 April 2000 with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became

effective on 18 May 2000 with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on 24 February 2005 that became effective on 13 July 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

**K. Compliance Schedules and Interim Requirements.** In general, an NPDES permit must include final effluent limitations that are consistent with Clean Water Act section 301 and with 40 CFR 122.44(d). There are exceptions to this general rule. The State Water Board has concluded that where the Regional Water Board's Basin Plan allows for schedules of compliance and the Regional Water Board is newly interpreting a narrative standard, it may include schedules of compliance in the permit to meet effluent limits that implement a narrative standard. See *In the Matter of Waste Discharge Requirements for Avon Refinery* (State Board Order WQ 2001-06 at pp. 53-55). See also *Communities for a Better Environment et al. v. State Water Resources Control Board*, 34 Cal.Rptr.3d 396, 410 (2005). The Basin Plan for the Sacramento and San Joaquin Rivers includes a provision that authorizes the use of compliance schedules in NPDES permits for water quality objectives that are adopted after the date of adoption of the Basin Plan, which was 25 September 1995 (See Basin Plan at page IV-16). Consistent with the State Water Board's Order in the CBE matter, the Regional Water Board has the discretion to include compliance schedules in NPDES permits when it is including an effluent limitation that is a "new interpretation" of a narrative water quality objective. This conclusion is also consistent with the United States Environmental Protection Agency policies and administrative decisions. See, e.g., Whole Effluent Toxicity (WET) Control Policy. The Regional Water Board, however, is not required to include a schedule of compliance, but may issue a Time Schedule Order pursuant to Water Code section 13300 or a Cease and Desist Order pursuant to Water Code section 13301 where it finds that the discharger is violating or threatening to violate the permit. The Regional Water Board will consider the merits of each case in determining whether it is appropriate to include a compliance schedule in a permit, and, consistent with the Basin Plan, should consider feasibility of achieving compliance, and must impose a schedule that is as short as practicable to achieve compliance with the objectives, criteria, or effluent limit based on the objective or criteria.

For CTR constituents, Section 2.1 of the SIP provides that, based on a Discharger's request and demonstration that it is infeasible for an existing Discharger to achieve immediate compliance with an effluent limitation derived from a CTR criterion, compliance schedules may be allowed in an NPDES permit. Unless an exception has been granted under section 5.3 of the SIP, a compliance schedule may not exceed 5 years from the date that the permit is issued or reissued, nor may it extend beyond 10 years from the effective date of the SIP (or 18 May 2010) to establish and comply with CTR criterion-based effluent limitations. Where a compliance schedule for a final effluent limitation exceeds 1 year, the Order must include interim numeric limitations for that constituent or parameter. Where allowed by the Basin Plan, compliance schedules and interim effluent limitations or discharge specifications may also be granted to allow time to implement a new or revised water quality objective. This Order includes compliance schedules and interim effluent limitations and/or discharge specifications. A



detailed discussion of the basis for the compliance schedule(s) and interim effluent limitation(s) and/or discharge specifications is included in the Fact Sheet.

**L. Alaska Rule.** On 30 March 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (WQS) become effective for CWA purposes. (40 CFR §131.21; 65 Fed. Reg. 24641 (27 April 2000).) Under the revised regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after 30 May 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by 30 May 2000 may be used for CWA purposes, whether or not approved by USEPA.

**M. Stringency of Requirements for Individual Pollutants.** This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on 5-day biochemical oxygen demand (BOD<sub>5</sub>), total suspended solids (TSS), settleable solids, and turbidity. The water quality-based effluent limitations consist of restrictions on pathogens. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order contains effluent limitations more stringent than the minimum, federal technology-based requirements that are necessary to meet water quality standards. These limitations are more stringent than required by the CWA. Specifically, this Order includes effluent limitations for BOD, TSS, turbidity and pathogens that are more stringent than applicable federal standards, but that are nonetheless necessary to meet numeric objectives or protect beneficial uses. The rationale for including these limitations is explained in the Fact Sheet. In addition, the Regional Water Board has considered the factors in Water Code section 13241, as discussed in Section IV.C.2.e of the Fact Sheet, in establishing these requirements.

Water quality-based effluent limitations have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant water quality-based effluent limitations were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR section 131.38. The scientific procedures for calculating the individual water quality-based effluent limitations are based on the CTR-SIP, which was approved by USEPA on 1 May 2001. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to 30 May 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to 30 May 2000, but not approved by USEPA before that date, are nonetheless "*applicable water quality standards for purposes of the [Clean Water] Act*" pursuant to 40 CFR section 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the technology-based requirements of the CWA and the applicable water quality standards for purposes of the CWA.

**N. Antidegradation Policy.** Section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 is consistent with the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. As discussed in detail in the Fact Sheet the permitted discharge is consistent with the antidegradation provision of section 131.12 and State Water Board Resolution No. 68-16.

**O. Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at title 40, Code of Federal Regulations section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order.

**P. Monitoring and Reporting.** Section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorizes the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. This Monitoring and Reporting Program is provided in Attachment E.

**Q. Standard and Special Provisions.** Standard Provisions, which apply to all NPDES permits in accordance with section 122.41, and additional conditions applicable to specified categories of permits in accordance with section 122.42, are provided in Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable under section 122.42. The Regional Water Board has also included in this Order special provisions applicable to the Discharger. A rationale for the special provisions contained in this Order is provided in the attached Fact Sheet.

The Regional Water Board has determined pollution prevention is necessary to achieve compliance with water quality objectives for aluminum; ammonia; copper; cyanide; diazinon; dichlorobromomethane; 1,2-diphenylhydrazine; 2,6-dinitrotoluene; tetrachloroethene; and zinc. In accordance with Water Code section 13263.3(d)(C), this Order requires the Discharger to develop a pollution prevention plan for these pollutants.

**R. Provisions and Requirements Implementing State Law.** The provisions/requirements in subsection VI.C of this Order are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

- S. Notification of Interested Parties.** The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet of this Order.
- T. Consideration of Public Comment.** The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet of this Order.

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### III. DISCHARGE PROHIBITIONS

- A. Discharge of wastewater at a location or in a manner different from that described in the Findings is prohibited.
- B. The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Federal Standard Provisions I.G. and I.H. (Attachment D).
- C. Neither the discharge nor its treatment shall create a nuisance as defined in Section 13050 of the California Water Code.
- D. The Discharger shall not allow pollutant-free wastewater to be discharged into the collection, treatment, and disposal system in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means rainfall, groundwater, cooling waters, and condensates that are essentially free of pollutants.
- E. **Five years following the adoption date of this Order**, the Discharger is prohibited from discharging into Jackson Creek when the receiving water flow does not provide a minimum of 20:1 dilution of the Facility's final effluent.

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**IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS****A. Effluent Limitations – Discharge Point No. 001****1. Final Effluent Limitations – Discharge Point No. 001**

The Discharger shall maintain compliance with the following effluent limitations at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-001 as described in the attached MRP (Attachment E):

- a. The Discharger shall maintain compliance with the effluent limitations specified in Table 6:

**Table 6. Effluent Limitations**

Table 67. Effluent Limitations						
Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
CONVENTIONALS						
Biochemical Oxygen Demand (BOD <sub>5</sub> ) (5-day @ 20 Deg. C)	mg/L	10	15	30	--	--
	lbs/day <sup>(1)</sup>	60	90	180	--	--
pH	s.u.	--	--	--	6.5	7.5
Total Suspended Solids (TSS)	mg/L	10	15	30	--	--
	lbs/day <sup>(1)</sup>	60	90	180	--	--
INORGANICS						
Copper, Total Recoverable	µg/L	3.3	--	6.7	--	--
Cyanide, Total	µg/L	4.3	--	8.5	--	--
Zinc, Total Recoverable	µg/L	30.95	--	62.1	--	--
ORGANICS						
Diazinon	µg/L	0.04	--	0.08	--	--
Dichlorobromomethane	µg/L	0.56	--	1.12	--	--
2,6-Dinitrotoluene	µg/L	0.05	--	0.10	--	--
1,2-Diphenylhydrazine	µg/L	0.04	--	0.08	--	--
Tetrachloroethene	µg/L	0.8	--	1.6	--	--
NON-CONVENTIONALS						
Aluminum, Total Recoverable <sup>(2)</sup>	µg/L	71.2	--	142.9	--	--
Nitrate (as NO <sub>3</sub> )	mg/L	45	--	--	--	--
Settleable Solids	ml/L	0.1	--	0.2	--	--
Total Coliform Organisms	MPN/100 mL	--	--	--	--	240
Turbidity	NTU	--	--	--	--	10

<sup>(1)</sup> Based on an average dry weather flow of 0.71 mgd.

<sup>(2)</sup> Compliance with the final effluent limitations for aluminum can be demonstrated using either total or acid-soluble (inductively coupled plasma/atomic emission spectrometry or inductively coupled plasma/mass spectrometry) analysis methods, as supported by USEPA's Ambient Water Quality Criteria for Aluminum document (EPA 440/5-86-008), or other standard methods that exclude aluminum silicate particles as approved by the Executive Officer.

- b. **Percent Removal:** The average monthly percent removal of BOD<sub>5</sub> and TSS shall not be less than 85 percent.

- c. **Total Recoverable Iron.** For a calendar year, the annual average total recoverable iron concentration in the effluent shall not exceed 300 µg/L. T
- d. **Total Recoverable Manganese.** For a calendar year, the annual average total recoverable manganese concentration in the effluent shall not exceed 50 µg/L. E
- e. **Acute Whole Effluent Toxicity.** Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than: N
  - i. 70%, minimum for any one bioassay; and T
  - ii. 90%, median for any three consecutive bioassays. A
- f. **Ammonia.** The following effluent limitations for ammonia are effective from 18 May 2010 until 5 years following the date of adoption of this Order: I
  - i. 1.2 mg/L, as an Average Monthly Effluent Limitation; and V
  - ii. 4.2 mg/L, as a Maximum Daily Effluent Limitation. E
- g. **Ammonia.** The following effluent limitations for ammonia become effective 5 years following the date of adoption of this Order: O
  - i. 1.0 mg/L, as an Average Monthly Effluent Limitation; and R
  - ii. 3.7 mg/L, as a Maximum Daily Effluent Limitation. R
- h. **Total Residual Chlorine.** Effluent total residual chlorine shall not exceed: D
  - i. 0.011 mg/L, as a 4-day average; and E
  - ii. 0.019 mg/L, as a 1-hour average. R
- i. **Turbidity.** Effluent turbidity shall not exceed:
  - i. 2 NTU, as a daily average;
  - ii. 5 NTU, more than 5% of the time within a 24-hour period; and
  - iii. 10 NTU, at any time.
- j. **Total Coliform Organisms.** Effluent total coliform organisms shall not exceed:
  - i. 2.2 most probable number (MPN) per 100 mL, as a 7-day median; and
  - ii. 23 MPN/100 mL, more than once in any 30-day period.
- k. **Average Dry Weather Flow.** The average dry weather flow (ADWF) shall not exceed 0.71 mgd.
- l. **Mass Limitation for Mercury.** The monthly average total recoverable mercury loading in the effluent shall not exceed 0.0016 lbs/month.
- m. **Electrical Conductivity.** The annual average electrical conductivity concentration in the effluent shall not exceed 426 µmhos/cm.

## 2. Interim Effluent Limitations

- a. During the period beginning the effective date of this Order and ending on 17 May 2010, the Discharger shall maintain compliance with the following limitations at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-001 as described in the attached MRP. These interim effluent limitations shall apply in lieu of the corresponding final effluent limitations specified for the same parameters during the time period indicated in this provision.

**Table 7. Interim Effluent Limitations**

Parameter	Units	Maximum Daily Effluent Limitations
Copper, Total Recoverable	µg/L	37.32
Cyanide, Total	µg/L	18.66
Diazinon	µg/L	1.18
Dichlorobromomethane	µg/L	4.67
1,2-Diphenylhydrazine	µg/L	0.62
2,6-Dinitrotoluene	µg/L	3.42
Silver, Total Recoverable	µg/L	3.73
Tetrachloroethene	µg/L	4.67
Zinc, Total Recoverable	µg/L	311

- b. **Aluminum, Total Recoverable:** During the period beginning the effective date of this Order and ending on the expiration date of this Order, the Discharger shall not exceed a maximum daily effluent limitation of 342.1 µg/L at Discharge Point No. 001.
- c. **Total Ammonia:** During the period beginning the permit effective date and ending on 17 May 2010 effluent ammonia (as N) shall not exceed the following:
- A monthly average in accordance with Table 8; and
  - A daily maximum in accordance with Table 9.

**Table 8. Ammonia Monthly Average Concentration Limitation (mg N/L)**

pH	Temperature, °C (°F)									
	0 (32)	14 (57)	16 (61)	18 (64)	20 (68)	22 (72)	24 (75)	26 (79)	28 (82)	30 (86)
6.5	6.67	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46
6.6	6.57	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42
6.7	6.44	6.44	5.86	5.15	4.52	3.98	3.50	3.07	2.70	2.37
6.8	6.29	6.29	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32
6.9	6.12	6.12	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25
7.0	5.91	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18
7.1	5.67	5.67	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09
7.2	5.39	5.39	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99
7.3	5.08	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87
7.4	4.73	4.73	4.30	3.78	3.32	2.92	2.57	2.26	1.98	1.74
7.5	4.36	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61
7.6	3.98	3.98	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47
7.7	3.58	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32
7.8	3.18	3.18	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17
7.9	2.80	2.80	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03
8.0	2.43	2.43	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.897
8.1	2.10	2.10	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773
8.2	1.79	1.79	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661
8.3	1.52	1.52	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562
8.4	1.29	1.29	1.17	1.03	0.906	0.796	0.700	0.615	0.541	0.475
8.5	1.09	1.09	0.990	0.870	0.765	0.672	0.591	0.520	0.457	0.401
8.6	0.920	0.920	0.836	0.735	0.646	0.568	0.499	0.439	0.386	0.339
8.7	0.778	0.778	0.707	0.622	0.547	0.480	0.422	0.371	0.326	0.287
8.8	0.661	0.661	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.244
8.9	0.565	0.565	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208
9.0	0.486	0.486	0.442	0.389	0.342	0.300	0.264	0.232	0.204	0.179

$$CCC = \left( \frac{0.0577}{1 + 10^{7.688 - pH}} + \frac{2.487}{1 + 10^{pH - 7.688}} \right) \times MIN \left( 2.85, 1.45 \cdot 10^{0.028(25 - T)} \right)$$

Where: CCC = criteria continuous concentration  
T = temperature in degrees Celsius (°C)



**Table 9. pH-Dependent Effluent Limits for Ammonia - Criterion Maximum Concentration, Maximum Daily Effluent Limitation**

pH	Ammonia Concentration Limit (mg N/L)
6.5	32.6
6.6	31.3
6.7	29.8
6.8	28.0
6.9	26.2
7.0	24.1
7.1	21.9
7.2	19.7
7.3	17.5
7.4	15.3
7.5	13.3
7.6	11.4
7.7	9.64
7.8	8.11
7.9	6.77
8.0	5.62
8.1	4.64
8.2	3.83
8.3	3.15
8.4	2.59
8.5	2.14
8.6	1.77
8.7	1.47
8.8	1.23
8.9	1.04
9.0	0.885

**B. Land Discharge Specifications**

[NOT APPLICABLE]

**C. Reclamation Specifications**

[NOT APPLICABLE]

## V. RECEIVING WATER LIMITATIONS

### A. Surface Water Limitations

Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order. The discharge shall not cause the following in Jackson Creek:

1. **Bacteria.** The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of 200 MPN/100 mL, nor more than 10 percent of the total number of fecal coliform samples taken during any 30-day period to exceed 400 MPN/100 mL.
2. **Biostimulatory Substances.** Water to contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.
3. **Chemical Constituents.** Chemical constituents to be present in concentrations that adversely affect beneficial uses.
4. **Color.** Discoloration that causes nuisance or adversely affects beneficial uses.
5. **Dissolved Oxygen:**
  - a. The monthly median of the mean daily dissolved oxygen concentration to fall below 85 percent of saturation in the main water mass;
  - b. The 95 percentile dissolved oxygen concentration to fall below 75 percent of saturation; nor
  - c. The dissolved oxygen concentration to be reduced below 7.0 mg/L at any time.
6. **Floating Material.** Floating material to be present in amounts that cause nuisance or adversely affect beneficial uses.
7. **Oil and Grease.** Oils, greases, waxes, or other materials to be present in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.
8. **pH.** The pH to be depressed below 6.5, raised above 8.5, nor changed by more than 0.5 units. A 1-month averaging period may be applied when calculating the pH change of 0.5 units.
9. **Pesticides:**
  - a. Pesticides to be present, individually or in combination, in concentrations that adversely affect beneficial uses.

- b. Pesticides to be present in bottom sediments or aquatic life in concentrations that adversely affect beneficial uses. T E
- c. Total identifiable persistent chlorinated hydrocarbon pesticides to be present in the water column at concentrations detectable within the accuracy of analytical methods approved by USEPA or the Executive Officer. N T
- d. Pesticide concentrations to exceed those allowable by applicable antidegradation policies (see State Water Board Resolution No. 68-16 and 40 CFR §131.12). A T
- e. Pesticide concentrations to exceed the lowest levels technically and economically achievable. I
- f. Pesticides to be present in concentration in excess of the maximum contaminant levels set forth in California Code of Regulations, Title 22, Division 4, Chapter 15. V E
- g. Thiobencarb to be present in excess of 1.0 µg/L.

#### 10. Radioactivity:

- a. Radionuclides to be present in concentrations that are harmful to human, plant, animal, or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life. O R D
- b. Radionuclides to be present in excess of the maximum contaminant levels specified in Table 4 (MCL Radioactivity) of Section 64443 of Title 22 of the California Code of Regulations. E R

11. **Suspended Sediments.** The suspended sediment load and suspended sediment discharge rate of surface waters to be altered in such a manner as to cause nuisance or adversely affect beneficial uses.

12. **Settleable Substances.** Substances to be present in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.

13. **Suspended Material.** Suspended material to be present in concentrations that cause nuisance or adversely affect beneficial uses.

14. **Taste and Odors.** Taste- or odor-producing substances to be present in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.

15. **Temperature.** The natural temperature of the receiving water to be increased by more than 5°F.

16. **Toxicity.** Toxic substances to be present, individually or in combination, in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.

17. **Turbidity.** The turbidity to increase as follows:

- a. More than 1 Nephelometric Turbidity Unit (NTU) where natural turbidity is between 0 and 5 NTUs.
- b. More than 20 percent where natural turbidity is between 5 and 50 NTUs.
- c. More than 10 NTU where natural turbidity is between 50 and 100 NTUs.
- d. More than 10 percent where natural turbidity is greater than 100 NTUs.

When wastewater is treated to a tertiary level (including coagulation) or equivalent, a 1-month averaging period may be used when determining compliance with this Receiving Surface Water Limitation for turbidity.

## **B. Groundwater Limitations**

The discharge shall not cause the underlying groundwater to be degraded.

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## VI. PROVISIONS

### A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions included in Attachment D of this Order.
2. The Discharger shall comply with the following provisions:
  - a. If the Discharger's wastewater treatment plant is publicly owned or subject to regulation by California Public Utilities Commission, it shall be supervised and operated by persons possessing certificates of appropriate grade according to Title 23, CCR, Division 3, Chapter 26.
  - b. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:
    - i. violation of any term or condition contained in this Order;
    - ii. obtaining this Order by misrepresentation or by failing to disclose fully all relevant facts;
    - iii. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and
    - iv. a material change in the character, location, or volume of discharge.

The causes for modification include:

- *New regulations.* New regulations have been promulgated under Section 405(d) of the Clean Water Act, or the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued.
- *Land application plans.* When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise an existing land application plan, or to add a land application plan.
- *Change in sludge use or disposal practice.* Under 40 Code of Federal Regulations (CFR) 122.62(a)(1), a change in the Discharger's sludge use or disposal practice is a cause for modification of the permit. It is cause for revocation and reissuance if the Discharger requests or agrees.

The Regional Water Board may review and revise this Order at any time upon application of any affected person or the Regional Water Board's own motion.

- c. If a toxic effluent standard or prohibition (including any scheduled compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the CWA, or amendments thereto, for a toxic pollutant that is present in the discharge authorized herein, and such standard or prohibition is more

stringent than any limitation upon such pollutant in this Order, the Regional Water Board will revise or modify this Order in accordance with such toxic effluent standard or prohibition.

The Discharger shall comply with effluent standards and prohibitions within the time provided in the regulations that establish those standards or prohibitions, even if this Order has not yet been modified.

- d. This Order shall be modified, or alternately revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:

- i. contains different conditions or is otherwise more stringent than any effluent limitation in the Order; or
- ii. controls any pollutant limited in the Order.

The Order, as modified or reissued under this paragraph, shall also contain any other requirements of the CWA then applicable.

- e. The provisions of this Order are severable. If any provision of this Order is found invalid, the remainder of this Order shall not be affected.
- f. The Discharger shall take all reasonable steps to minimize any adverse effects to waters of the State or users of those waters resulting from any discharge or sludge use or disposal in violation of this Order. Reasonable steps shall include such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge or sludge use or disposal.
- g. The Discharger shall ensure compliance with any existing or future pretreatment standard promulgated by USEPA under Section 307 of the CWA, or amendment thereto, for any discharge to the municipal system.
- h. The discharge of any radiological, chemical or biological warfare agent or high-level, radiological waste is prohibited.
- i. A copy of this Order shall be maintained at the discharge facility and be available at all times to operating personnel. Key operating personnel shall be familiar with its content.
- j. Safeguard to electric power failure:
- i. The Discharger shall provide safeguards to assure that, should there be reduction, loss, or failure of electric power, the discharge shall comply with the terms and conditions of this Order.
  - ii. Upon written request by the Regional Water Board the Discharger shall submit a written description of safeguards. Such safeguards may include alternate power sources, standby generators, retention capacity, operating

procedures, or other means. A description of the safeguards provided shall include an analysis of the frequency, duration, and impact of power failures experienced over the past five years on effluent quality and on the capability of the Discharger to comply with the terms and conditions of the Order. The adequacy of the safeguards is subject to the approval of the Regional Water Board.

- iii. Should the treatment works not include safeguards against reduction, loss, or failure of electric power, or should the Regional Water Board not approve the existing safeguards, the Discharger shall, within 90 days of having been advised in writing by the Regional Water Board that the existing safeguards are inadequate, provide to the Regional Water Board and USEPA a schedule of compliance for providing safeguards such that in the event of reduction, loss, or failure of electric power, the Discharger shall comply with the terms and conditions of this Order. The schedule of compliance shall, upon approval of the Regional Water Board, become a condition of this Order.
- k. The Discharger, upon written request of the Regional Water Board, shall file with the Board a technical report on its preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. This report may be combined with that required under Regional Water Board Standard Provision VI.A.2.m.

The technical report shall:

- i. Identify the possible sources of spills, leaks, untreated waste by-pass, and contaminated drainage. Loading and storage areas, power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes should be considered.
- ii. Evaluate the effectiveness of present facilities and procedures and state when they became operational.
- iii. Predict the effectiveness of the proposed facilities and procedures and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

The Regional Water Board, after review of the technical report, may establish conditions which it deems necessary to control accidental discharges and to minimize the effects of such events. Such conditions shall be incorporated as part of this Order, upon notice to the Discharger.

- l. A publicly owned treatment works (POTW) whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment and disposal facilities. The projections shall be made in January, based on the last three years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in four years, the Discharger shall notify the Regional Water Board by

- 31 January. A copy of the notification shall be sent to appropriate local elected officials, local permitting agencies and the press. Within 120 days of the notification, the Discharger shall submit a technical report showing how it will prevent flow volumes from exceeding capacity or how it will increase capacity to handle the larger flows. The Regional Water Board may extend the time for submitting the report. T  
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- m. The Discharger shall submit technical reports as directed by the Executive Officer. All technical reports required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code, sections 6735, 7835, and 7835.1. To demonstrate compliance with Title 16, CCR, sections 415 and 3065, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work. A  
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- n. Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Regional Water Board and USEPA. O  
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- o. The Discharger shall conduct analysis on any sample provided by USEPA as part of the Discharge Monitoring Quality Assurance (DMQA) program. The results of any such analysis shall be submitted to USEPA's DMQA manager. D  
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- p. Effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge. R
- q. All monitoring and analysis instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary, at least yearly, to ensure their continued accuracy.
- r. The Discharger shall file with the Regional Water Board technical reports on self-monitoring performed according to the detailed specifications contained in the Monitoring and Reporting Program attached to this Order.
- s. The results of all monitoring required by this Order shall be reported to the Regional Water Board, and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order. Unless otherwise specified, discharge flows shall be reported in terms of the monthly average and the daily maximum discharge flows.
- t. The Regional Water Board is authorized to enforce the terms of this permit under several provisions of the CWC, including, but not limited to, sections 13385, 13386, and 13387.



- u. For POTWs, prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a decrease of flow in any portion of a watercourse, the Discharger must file a petition with the State Water Board, Division of Water Rights, and receive approval for such a change. (CWC section 1211)
- v. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, maximum daily effluent limitation, 1-hour average effluent limitation, or receiving water limitation contained in this Order, the Discharger shall notify the Regional Water Board by telephone (916) 464-3291 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within 5 days, unless the Regional Water Board waives confirmation. The written notification shall include the information required by Attachment D, Section V.E.1 [40 CFR section 122.41(l)(6)(i)].

## **B. Monitoring and Reporting Program (MRP) Requirements**

1. The Discharger shall comply with the MRP, and future revisions thereto, in Attachment E of this Order.

## **C. Special Provisions**

### **1. Reopener Provisions**

- a. This Order may be reopened for modification, or revocation and reissuance, as a result of the detection of a reportable priority pollutant generated by special conditions included in this Order. These special conditions may be, but are not limited to, fish tissue sampling, whole effluent toxicity, monitoring requirements on internal waste stream(s), and monitoring for surrogate parameters. Additional requirements may be included in this Order as a result of the special condition monitoring data.
- b. Conditions that necessitate a major modification of a permit are described in 40 CFR section 122.62, including:
  - i. If new or amended applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA, or amendments thereto, this permit may be reopened and modified in accordance with the new or amended standards.
  - ii. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.
- c. **Mercury.** If mercury is found to be causing toxicity based on acute or chronic toxicity test results, or if a TMDL program is adopted, this Order shall be reopened and the mass effluent limitation modified (higher or lower) or an effluent concentration limitation imposed. If the Regional Water Board determines that a mercury offset program is feasible for Dischargers subject to a

NPDES permit, then this Order may be reopened to reevaluate the mercury mass loading limitation(s) and the need for a mercury offset program for the Discharger.

- d. **Pollution Prevention.** This Order requires the Discharger prepare pollution prevention plans following CWC section 13263.3(d)(3) for aluminum; ammonia; copper; cyanide; diazinon; dichlorobromomethane; 1,2-diphenylhydrazine; 2,6-dinitrotoluene; tetrachloroethene; and zinc. Based on a review of the pollution prevention plans, this Order may be reopened for addition and/or modification of effluent limitations and requirements for these constituents.
- e. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if the State Water Board revises the SIP's toxicity control provisions that would require the establishment of numeric chronic toxicity effluent limitations, this Order may be reopened to include a numeric chronic toxicity effluent limitation based on the new provisions.
- f. **Water Effects Ratios (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable priority pollutant inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable when developing effluent limitations for constituents in this Order. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.
- g. **Jackson Creek Beneficial Use Attainment Study.** This Order requires the Discharger to conduct a Beneficial Use Attainment Study for Jackson Creek, downstream of the discharge location. Based on a review of the findings of this study, this Order may be reopened for addition and/or modification of effluent limitations and requirements.

## 2. Special Studies, Technical Reports and Additional Monitoring Requirements

- a. **Chronic Whole Effluent Toxicity.** For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct chronic whole effluent toxicity testing, as specified in the Monitoring and Reporting Program (Attachment E, Section V.). Furthermore, this Provision requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity. If the discharge exceeds the toxicity numeric monitoring trigger established in this Provision, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE), in accordance with an approved TRE Work Plan, and take actions to mitigate the impact of the discharge and prevent reoccurrence of toxicity. A TRE is a site-specific study conducted in a stepwise process to identify the source(s) of toxicity and the effective control measures for effluent toxicity. TREs are designed to identify the causative

agents and sources of whole effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity. This Provision includes requirements for the Discharger to develop and submit a TRE Work Plan and includes procedures for accelerated chronic toxicity monitoring and TRE initiation.

- i. **Initial Investigative Toxicity Reduction Evaluation (TRE) Work Plan.** Within 90 days of the adoption date of this Order, the Discharger shall submit to the Regional Water Board an Initial Investigative TRE Work Plan for approval by the Executive Officer. This should be a one to two page document including, at minimum:
  - a) A description of the investigation and evaluation techniques that will be used to identify potential causes and sources of effluent toxicity, effluent variability, and treatment system efficiency;
  - b) A description of the facility's methods of maximizing in-house treatment efficiency and good housekeeping practices, and a list of all chemicals used in operation of the facility; and
  - c) A discussion of who will conduct the Toxicity Identification Evaluation, if necessary (i.e., an in-house expert or outside contractor).
- ii. **Accelerated Monitoring and TRE Initiation.** When the numeric toxicity monitoring trigger is exceeded during regular chronic toxicity monitoring, and the testing meets all test acceptability criteria, the Discharger shall initiate accelerated monitoring as required in the Accelerated Monitoring Specifications. WET testing results exceeding the monitoring trigger during accelerated monitoring demonstrates a pattern of toxicity and requires the Discharger to initiate a TRE to address the effluent toxicity.
- iii. **Numeric Monitoring Trigger.** The numeric toxicity monitoring trigger is  $> 1 \text{ TUc}$  (where  $\text{TUc} = 100/\text{NOEC}$ ). The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to begin accelerated monitoring and initiate a TRE.
- iv. **Accelerated Monitoring Specifications.** If the monitoring trigger is exceeded during regular chronic toxicity testing, within 14-days of notification by the laboratory of the test results, the Discharger shall initiate accelerated monitoring. Accelerated monitoring shall consist of four (4) chronic toxicity tests in a six-week period (i.e. one test every two weeks) using the species that exhibited toxicity. The following protocol shall be used for accelerated monitoring and TRE initiation:
  - a) If the results of four (4) consecutive accelerated monitoring tests do not exceed the monitoring trigger, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring. However, notwithstanding the accelerated monitoring results, if there is adequate

evidence of a pattern of effluent toxicity, the Executive Officer may require that the Discharger initiate a TRE.

b) If the source(s) of the toxicity is easily identified (i.e., temporary plant upset), the Discharger shall make necessary corrections to the facility and shall continue accelerated monitoring until four (4) consecutive accelerated tests do not exceed the monitoring trigger. Upon confirmation that the effluent toxicity has been removed, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring.

c) If the result of any accelerated toxicity test exceeds the monitoring trigger, the Discharger shall cease accelerated monitoring and initiate a TRE to investigate the cause(s) of, and identify corrective actions to reduce or eliminate effluent toxicity. Within thirty (30) days of notification by the laboratory of the test results exceeding the monitoring trigger during accelerated monitoring, the Discharger shall submit a TRE Action Plan to the Regional Water Board including, at minimum:

- 1) Specific actions the Discharger will take to investigate and identify the cause(s) of toxicity, including TRE WET monitoring schedule;
- 2) Specific actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and
- 3) A schedule for these actions.

Within sixty (60) days of notification by the laboratory of the test results, the Discharger shall submit to the Regional Water Board a TRE Work Plan for approval by the Executive Officer. The TRE Work Plan shall outline the procedures for identifying the source(s) of, and reducing or eliminating effluent toxicity. The TRE Work Plan must be developed in accordance with USEPA guidance.

b. **Jackson Creek Beneficial Use Attainment Study.** The Discharger shall develop a work plan for a study to 1) further determine the characteristics needed in Jackson Creek downstream of the discharge to support applicable non-human health protection beneficial uses (agricultural supply for irrigation and stock watering, industrial process supply and service supply, warm freshwater aquatic habitat, cold freshwater aquatic habitat, warm and cold fish migration habitat, warm spawning habitat, wildlife habitat, and navigation.), and 2) identify the minimum flow necessary to meet downstream existing water rights.

The work plan shall be developed in consultation with the Department of Fish and Game and Regional Water Board staff. The work plan is due **within six months after the adoption date of the permit**; the study shall be implemented and completed **within 24 months of approval of the workplan.**

### 3. Best Management Practices and Pollution Prevention

- a. **Salinity Evaluation and Minimization Plan.** The Discharger shall prepare a salinity evaluation and minimization plan to address sources of salinity from the Facility. The plan shall be completed and submitted to the Regional Water Board **within 9 months of the adoption date of this Order** for the approval by the Executive Officer.
- b. **Pollution Prevention Plan.** The Discharger shall prepare and implement a pollution prevention plan for aluminum; ammonia; copper; cyanide; diazinon; dichlorobromomethane; 1,2-diphenylhydrazine; 2,6-dinitrotoluene; tetrachloroethene; and zinc in accordance with CWC section 13263.3(d)(3), and as specified in section VI.7.a.ii of this Order.
- c. **2,3,7,8-TCCD Congeners Source Evaluation and Minimization Plan.** The Discharger shall prepare and implement a 2,3,7,8-TCCD congeners evaluation and minimization plan to address sources of detectable dioxins (OCDD) and furans (OCDF) from the Facility. The plan shall be completed and submitted to the Regional Water Board **within 9 months of the adoption date of this Order** for the approval by the Executive Officer.

### 4. Construction, Operation and Maintenance Specifications

[NOT APPLICABLE]

### 5. Special Provisions for Municipal Facilities

- a. **Sludge/Biosolids Discharge Specifications**
  - i. Collected screenings, residual sludge, biosolids, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer, and consistent with *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste*, as set forth in Title 27, CCR, Division 2, Subdivision 1, section 20005, et seq. Removal for further treatment, disposal, or reuse at sites (i.e., landfill, composting sites, soil amendment sites) that are operated in accordance with valid waste discharge requirements issued by a Regional Water Board will satisfy these specifications.
  - ii. Sludge and solid waste shall be removed from screens, sumps, ponds, clarifiers, etc. as needed to ensure optimal plant performance.
  - iii. The treatment of sludge generated at the Facility shall be confined to the Facility property and conducted in a manner that precludes infiltration of waste constituents into soils in a mass or concentration that will exceed the groundwater protection standards contained in the Basin Plan. In addition, the storage of residual sludge, solid waste, and biosolids on Facility property shall be temporary and controlled, and contained in a manner that minimizes

leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will exceed the groundwater protection standards contained in the Basin Plan.

- iv. The use and disposal of biosolids shall comply with existing federal and State laws and regulations, including permitting requirements and technical standards included in 40 CFR Part 503. If the State Water Board and the Regional Water Board are given the authority to implement regulations contained in 40 CFR Part 503, this Order may be reopened to incorporate appropriate time schedules and technical standards. The Discharger must comply with the standards and time schedules contained in 40 CFR Part 503 whether or not they have been incorporated into this Order.

**b. Biosolids Disposal Requirements**

- i. The Discharger shall comply with the Monitoring and Reporting Program for biosolids disposal contained in Attachment E.
- ii. Any proposed change in biosolids use or disposal practice from a previously approved practice shall be reported to the Executive Officer and USEPA Regional Administrator at least **90 days** in advance of the change.
- iii. The Discharger is encouraged to comply with the "Manual of Good Practice for Agricultural Land Application of Biosolids" developed by the California Water Environment Association.

**c. Biosolids Storage Requirements**

- i. Facilities for the storage of Class B biosolids shall be located, designed and maintained to restrict public access to biosolids.
- ii. Biosolids storage facilities shall be designed and maintained to prevent washout or inundation from a storm or flood with a return frequency of 100 years.
- iii. Biosolids storage facilities, which contain biosolids, shall be designed and maintained to contain all storm water falling on the biosolids storage area during a rainfall year with a return frequency of 100 years.
- iv. Biosolids storage facilities shall be designed, maintained and operated to minimize the generation of leachate.

- d. **Collection System.** On 2 May 2006, the State Water Board adopted State Water Board Order No. 2006-0003, a Statewide General WDR for Sanitary Sewer Systems. The Discharger shall be subject to the requirements of Order No. 2006-0003 and any future revisions thereto. Order No. 2006-0003 requires that all public agencies that currently own or operate sanitary sewer systems apply for coverage under the General WDR. By 2 November 2006, the Discharger was required by that Order, not incorporated by reference herein, to apply for coverage under State Water Board Order No. 2006-0003 for operation of its wastewater collection system.

Regardless of the coverage obtained under Order No. 2006-0003, the Discharger's collection system is part of the treatment system that is subject to this Order. As such, pursuant to federal regulations, the Discharger must properly operate and maintain its collection system [40 CFR section 122.41(e)], report any non-compliance [40 CFR section 122.41(l)(6) and (7)], and mitigate any discharge from the collection system in violation of this Order [40 CFR section 122.41(d)].

## 6. Other Special Provisions

- a. Wastewater shall be oxidized, coagulated, filtered, and adequately disinfected pursuant to the Department of Public Health (DPH) reclamation criteria, California Code of Regulations, Title 22, Division 4, Chapter 3, (Title 22), or equivalent.
- b. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Regional Water Board.

To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Regional Water Board and a statement. The statement shall comply with the signatory and certification requirements in the Federal Standard Provisions (Attachment D, Section V.B.) and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

## 7. Compliance Schedules

- a. **Compliance Schedules for Final Effluent Limitations for Aluminum; Ammonia; Copper; Cyanide; Diazinon; Dichlorobromomethane; 1,2-Diphenylhydrazine; 2,6-Dinitrotoluene; Tetrachloroethene; and Zinc.**

- By 18 May 2010**, the Discharger shall comply with the final effluent limitations for ammonia; copper; cyanide; diazinon; dichlorobromomethane; 1,2-diphenylhydrazine; 2,6-dinitrotoluene; tetrachloroethene; and zinc. **By the expiration date of this Order**, the Discharger shall comply with the final effluent limitations for aluminum. On 7 August 2007, the Discharger submitted a compliance schedule justification for aluminum, ammonia; copper; cyanide; diazinon; dichlorobromomethane; 1,2-diphenylhydrazine; 2,6-dinitrotoluene; tetrachloroethene; and zinc. The compliance schedule justification included all items specified in Paragraph 3, items (a) through (d), of section 2.1 of the SIP, and a proposed site-specific Water Effect Ratio study for Aluminum. As these compliance schedules are greater than 1 year, the Discharger shall submit semi-annual progress reports in accordance with the Monitoring and Reporting Program (Attachment E, Section X.D.1.)
- b. Pollution Prevention Plan.** The Discharger shall prepare and implement a pollution prevention plan for aluminum; ammonia; copper; cyanide; diazinon; dichlorobromomethane; 1,2-diphenylhydrazine; 2,6-dinitrotoluene; tetrachloroethene; and zinc, in accordance with CWC section 13263.3(d)(3). The minimum requirements for the pollution prevention plan are outlined in the Fact Sheet, Attachment F, VII.B.3.b. A work plan and time schedule for preparation of the pollution prevention plan shall be completed and submitted to the Regional Water Board **within 6 months of the adoption date of this Order** for approval by the Executive Officer. The Pollution Prevention Plan shall be completed and submitted to the Regional Water Board **within two (2) years following work plan approval by the Executive Officer**, and progress reports shall be submitted in accordance with the Monitoring and Reporting Program (Attachment E, Section X.D.1.).
- c. Compliance Schedule to Ensure Compliance with Prohibition to Discharge to Jackson Creek When Receiving Water Flows Do Not Provide a Minimum of 20:1 Dilution.** The Discharger shall evaluate and implement alternative wastewater handling and disposal methods that will ensure compliance with Discharge Prohibition III.E of this Order, which prohibits the discharge of wastewater into Jackson Creek when a minimum of 20:1 receiving water to effluent dilution is not available. The Discharger shall submit a work plan and time schedule for the evaluation of wastewater handling and disposal methods or alternative practices that would ensure compliance with Discharge Prohibition III.E, **within 3 months of the adoption date of this Order**. The evaluation of wastewater handling and disposal methods, or alternative practices to ensure compliance with Discharge Prohibition III.E, and a final work plan to ensure compliance with Discharge Prohibition III.E shall be completed and submitted to the Regional Water Board **within 18 months following the adoption date of this Order**. Progress reports shall be submitted in accordance with Monitoring and Reporting Program (Attachment E, Section X.D.1.). Full implementation of the final work plan to ensure compliance with Discharge Prohibition III.E shall be achieved within 5 (five) years following the adoption date of this Order.



## VII. COMPLIANCE DETERMINATION

- A. **Persistent Chlorinated Hydrocarbon Pesticides Effluent Limitations.** The non-detectable (ND) limitation applies to each individual pesticide. No individual pesticide may be present in the discharge at detectable concentrations. The Discharger shall use USEPA standard analytical techniques with the lowest possible detectable level for persistent chlorinated hydrocarbon pesticides with a minimum acceptable reporting level as indicated in Appendix 4 of the SIP.
- B. **BOD and TSS Effluent Limitations (IV.A.1.a.).** Compliance with the final effluent limitations for BOD and TSS required in sections IV.A.1.a shall be ascertained by 24-hour composite samples. Compliance with effluent limitations <subsection> for percent removal shall be calculated using the arithmetic mean of 20°C BOD (5-day) and total suspended solids in effluent samples collected over a monthly period as a percentage of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period.
- C. **Aluminum Effluent Limitations (IV.A.1.a.).** Compliance with the final effluent limitations for aluminum can be demonstrated using either total or acid-soluble (inductively coupled plasma/atomic emission spectrometry or inductively coupled plasma/mass spectrometry) analysis methods, as supported by USEPA's Ambient Water Quality Criteria for Aluminum document (EPA 440/5-86-008), or other standard methods that exclude aluminum silicate particles as approved by the Executive Officer.
- D. **Total Mercury Mass Loading Effluent Limitations (IV.A.1.i.).** The procedures for calculating mass loadings are as follows:
1. The total pollutant mass load for each individual calendar month shall be determined using an average of all concentration data collected that month and the corresponding total monthly flow. All monitoring data collected under the monitoring and reporting program, pretreatment program and any special studies shall be used for these calculations.
  2. In calculating compliance, the Discharger shall count all non-detect measures at one-half of the detection level. If compliance with the effluent limitation is not attained due to the non-detect contribution, the Discharger shall improve and implement available analytical capabilities and compliance shall be evaluated with consideration of the detection limits.
- E. **Average Dry Weather Flow Effluent Limitations (IV.A.1.k.).** The Average Dry Weather Flow (ADWF) represents the daily average flow when groundwater is at or near normal and runoff is not occurring. Compliance with the ADWF effluent limitations will be determined annually based on the average daily flow over three consecutive dry weather months (e.g., July, August, and September).
- F. **Mass Effluent Limitations.** Compliance with the mass effluent limitations will be determined during average dry weather periods only when groundwater is at or near normal and runoff is not occurring.

**G. Total Coliform Organisms Effluent Limitations (Section IV.A.1.j.).** For each day that an effluent sample is collected and analyzed for total coliform organisms, the 7-day median shall be determined by calculating the median concentration of total coliform bacteria in the effluent utilizing the bacteriological results of the last 7 days for which analyses have been completed. If the 7-day median of total coliform organisms exceeds a most probable number (MPN) of 2.2 per 100 milliliters, the Discharger will be considered out of compliance for that parameter for that 1 day only within the reporting period.

**H. Total Residual Chlorine Effluent Limitations (Section IV.A.1.h.).** Continuous monitoring analyzers for chlorine residual or for dechlorination agent residual in the effluent are appropriate methods for compliance determination. A positive residual dechlorination agent in the effluent indicates that chlorine is not present in the discharge, which demonstrates compliance with the effluent limitations. This type of monitoring can also be used to prove that some chlorine residual exceedances are false positives. Continuous monitoring data showing either a positive dechlorination agent residual or a chlorine residual at or below the prescribed limit are sufficient to show compliance with the total residual chlorine effluent limitations, as long as the instruments are maintained and calibrated in accordance with the manufacturer's recommendations.

Any excursion above the 1-hour average or 4-day average total residual chlorine effluent limitations is a violation. If the Discharger conducts continuous monitoring and the Discharger can demonstrate, through data collected from a back-up monitoring system, that a chlorine spike recorded by the continuous monitor was not actually due to chlorine, then any excursion resulting from the recorded spike will not be considered an exceedance, but rather reported as a false positive.

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## ATTACHMENT A – DEFINITIONS

**Arithmetic Mean ( $\mu$ )**, also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

Arithmetic mean =  $\mu = \Sigma x / n$       where:  $\Sigma x$  is the sum of the measured ambient water concentrations, and  $n$  is the number of samples.

**Average Monthly Effluent Limitation (AMEL)**: the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

**Average Weekly Effluent Limitation (AWEL)**: the highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

**Best Practicable Treatment or Control (BPTC)**: BPTC is a requirement of State Water Resources Control Board Resolution 68-16 – “Statement of Policy with Respect to Maintaining High Quality of Waters in California” (referred to as the “Antidegradation Policy”). BPTC is the treatment or control of a discharge necessary to assure that, “(a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.” Pollution is defined in CWC Section 13050(I). In general, an exceedance of a water quality objective in the Basin Plan constitutes “pollution”.

**Bioaccumulative** pollutants are those substances taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

**Carcinogenic** pollutants are substances that are known to cause cancer in living organisms.

**Coefficient of Variation (CV)** is a measure of the data variability and is calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

**Daily Discharge**: Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of 1 day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

**Detected, but Not Quantified (DNQ)** are those sample results less than the RL, but greater than or equal to the laboratory's MDL.

**Dilution Credit** is the amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined through conducting a mixing zone study or modeling of the discharge and receiving water.

**Effluent Concentration Allowance (ECA)** is a value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as waste load allocation (WLA) as used in USEPA guidance (*Technical Support Document For Water Quality-based Toxics Control*, March 1991, second printing, EPA/505/2-90-001).

**Enclosed Bays** means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

**Estimated Chemical Concentration** is the estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

**Estuaries** means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters included, but are not limited to, the Sacramento-San Joaquin Delta, as defined in Water Code section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

**Inland Surface Waters** are all surface waters of the State that do not include the ocean, enclosed bays, or estuaries.

**Instantaneous Maximum Effluent Limitation:** the highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

**Instantaneous Minimum Effluent Limitation:** the lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation). T  
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**Maximum Daily Effluent Limitation (MDEL)** means the highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day. N  
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**Median** is the middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements ( $n$ ) is odd, then the median =  $X_{(n+1)/2}$ . If  $n$  is even, then the median =  $(X_{n/2} + X_{(n/2)+1})/2$  (i.e., the midpoint between the  $n/2$  and  $n/2+1$ ). T  
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**Method Detection Limit (MDL)** is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in title 40 of the Code of Federal Regulations, Part 136, Attachment B, revised as of 3 July 1999. E

**Minimum Level (ML)** is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed. O  
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**Mixing Zone** is a limited volume of receiving water that is allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body. E  
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**Not Detected (ND)** are those sample results less than the laboratory's MDL.

**Ocean Waters** are the territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. Discharges to ocean waters are regulated in accordance with the State Water Board's California Ocean Plan.

**Persistent** pollutants are substances for which degradation or decomposition in the environment is nonexistent or very slow.

**Pollutant Minimization Program (PMP)** means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being

impacted. The Regional Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

**Pollution Prevention** means any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State or Regional Water Board.

**Reporting Level (RL)** is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from Appendix 4 of the SIP in accordance with section 2.4.2 of the SIP or established in accordance with section 2.4.3 of the SIP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

**Satellite Collection System** is the portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility that a sanitary sewer system is tributary to.

**Source of Drinking Water** is any water designated as municipal or domestic supply (MUN) in a Regional Water Board Basin Plan.

**Standard Deviation ( $\sigma$ )** is a measure of variability that is calculated as follows:

$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

where:

x is the observed value;

$\mu$  is the arithmetic mean of the observed values; and

n is the number of samples.

**Toxicity Reduction Evaluation (TRE)** is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity.

The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s)

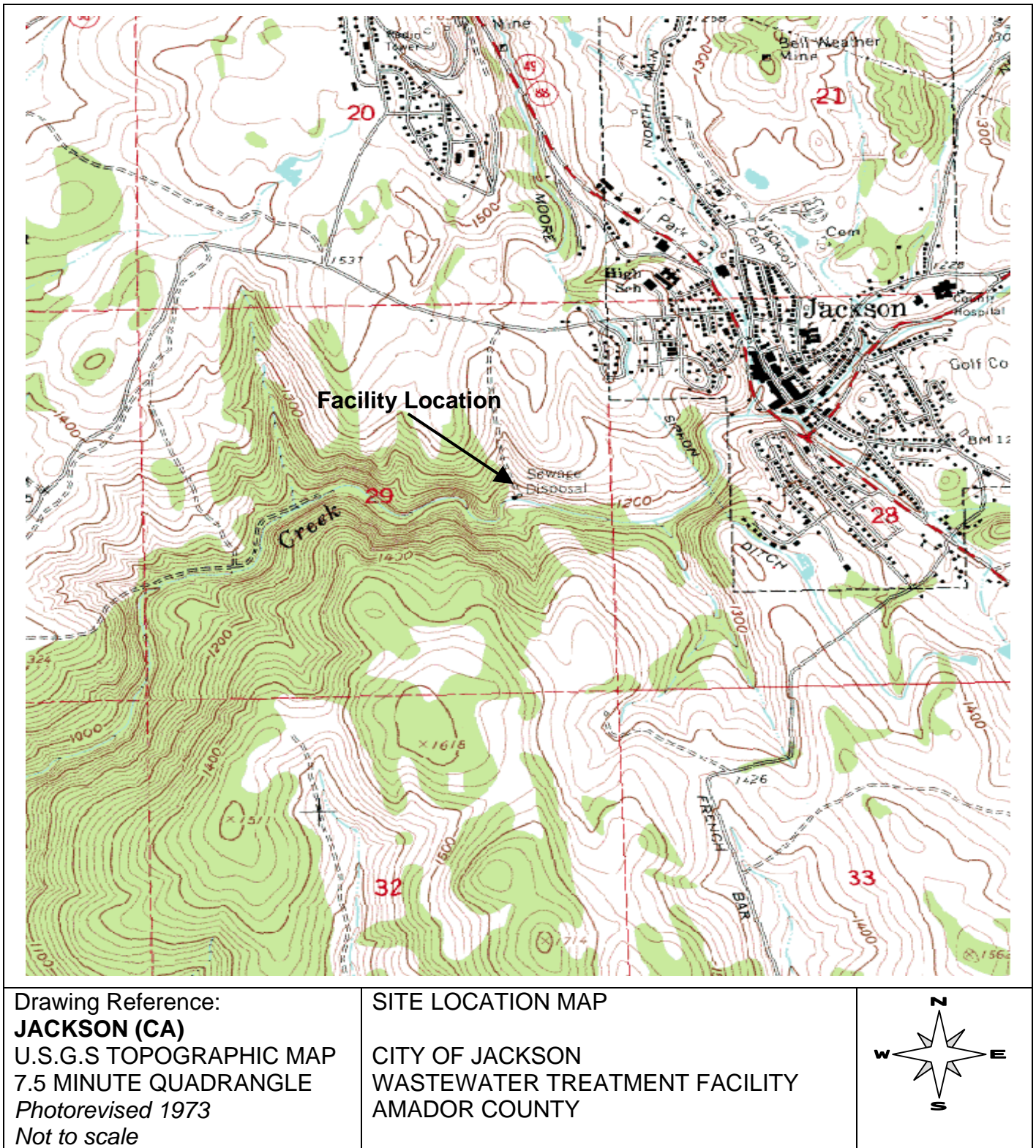
responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

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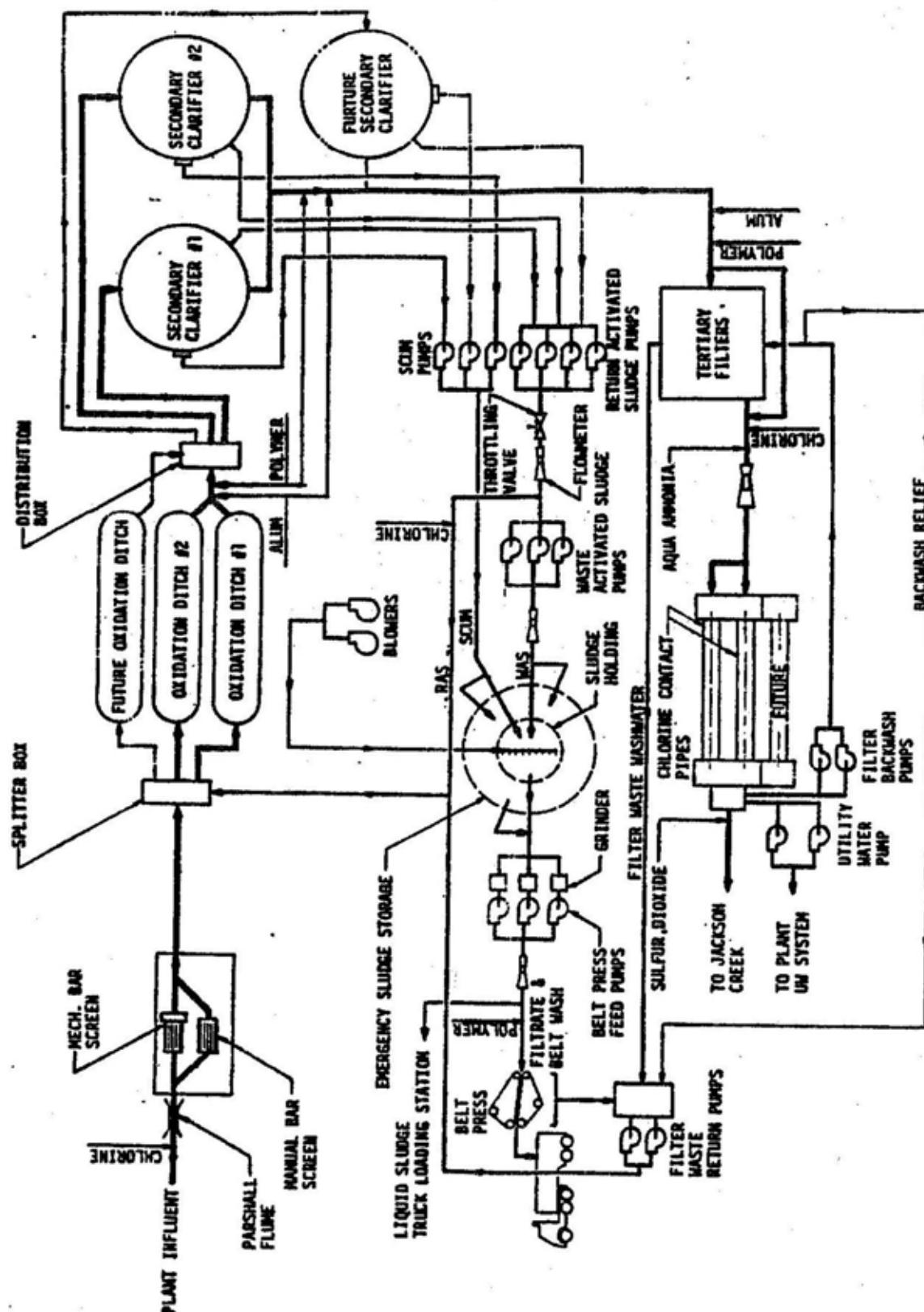
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## ATTACHMENT C – FLOW SCHEMATIC



## PLANT FLOW DIAGRAM

# TENTATIVE ORDER

## **ATTACHMENT D –STANDARD PROVISIONS**

### **I. STANDARD PROVISIONS – PERMIT COMPLIANCE**

#### **A. Duty to Comply**

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 CFR §122.41(a).)
2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 CFR §122.41(a)(1).)

#### **B. Need to Halt or Reduce Activity Not a Defense**

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. (40 CFR §122.41(c).)

#### **C. Duty to Mitigate**

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 CFR §122.41(d).)

#### **D. Proper Operation and Maintenance**

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. (40 CFR §122.41(e).)

#### **E. Property Rights**

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 CFR §122.41(g).)

2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 CFR §122.5(c).)

## **F. Inspection and Entry**

The Discharger shall allow the Regional Water Board, State Water Board, United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (40 CFR §122.41(i); Wat. Code, § 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (40 CFR §122.41(i)(1));
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (40 CFR §122.41(i)(2));
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (40 CFR §122.41(i)(3)); and
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (40 CFR §122.41(i)(4).)

## **G. Bypass**

1. Definitions
  - a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 CFR §122.41(m)(1)(i).)
  - b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 CFR §122.41(m)(1)(ii).)
2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 CFR §122.41(m)(2).)

3. Prohibition of bypass. Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless (40 CFR §122.41(m)(4)(i)):
  - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 CFR §122.41(m)(4)(i)(A));
  - b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 CFR §122.41(m)(4)(i)(B)); and
  - c. The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 CFR §122.41(m)(4)(i)(C).)
4. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 CFR §122.41(m)(4)(ii).)
5. Notice
  - a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 CFR §122.41(m)(3)(i).)
  - b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 CFR §122.41(m)(3)(ii).)

## H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 CFR §122.41(n)(1).)

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was

caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 CFR §122.41(n)(2).).

2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 CFR §122.41(n)(3)):
  - a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 CFR §122.41(n)(3)(i));
  - b. The permitted facility was, at the time, being properly operated (40 CFR §122.41(n)(3)(ii));
  - c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 CFR §122.41(n)(3)(iii)); and
  - d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 CFR §122.41(n)(3)(iv).)
3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 CFR §122.41(n)(4).)

## **II. STANDARD PROVISIONS – PERMIT ACTION**

### **A. General**

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 CFR §122.41(f).)

### **B. Duty to Reapply**

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 CFR §122.41(b).)

### **C. Transfers**

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 CFR §122.41(l)(3); §122.61.)

### III. STANDARD PROVISIONS – MONITORING

- A.** Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 CFR §122.41(j)(1).)
- B.** Monitoring results must be conducted according to test procedures under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503 unless other test procedures have been specified in this Order. (40 CFR §122.41(j)(4); §122.44(i)(1)(iv).)

### IV. STANDARD PROVISIONS – RECORDS

- A.** Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by Part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time. (40 CFR §122.41(j)(2).)

**B. Records of monitoring information shall include:**

1. The date, exact place, and time of sampling or measurements (40 CFR §122.41(j)(3)(i));
2. The individual(s) who performed the sampling or measurements (40 CFR §122.41(j)(3)(ii));
3. The date(s) analyses were performed (40 CFR §122.41(j)(3)(iii));
4. The individual(s) who performed the analyses (40 CFR §122.41(j)(3)(iv));
5. The analytical techniques or methods used (40 CFR §122.41(j)(3)(v)); and
6. The results of such analyses. (40 CFR §122.41(j)(3)(vi).)

**C. Claims of confidentiality for the following information will be denied (40 CFR §122.7(b)):**

1. The name and address of any permit applicant or Discharger (40 CFR §122.7(b)(1)); and
2. Permit applications and attachments, permits and effluent data. (40 CFR §122.7(b)(2).)

## V. STANDARD PROVISIONS – REPORTING

### A. Duty to Provide Information

The Discharger shall furnish to the Regional Water Board, State Water Board, or USEPA within a reasonable time, any information which the Regional Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Regional Water Board, State Water Board, or USEPA copies of records required to be kept by this Order. (40 CFR §122.41(h); Wat. Code, §13267.)

### B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 CFR §122.41(k).)
2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA). (40 CFR §122.22(a)(3).)
3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or USEPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
  - a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 CFR §122.22(b)(1));
  - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 CFR §122.22(b)(2)); and
  - c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 CFR §122.22(b)(3).)
4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard

Provisions – Reporting V.B.3 above must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 CFR §122.22(c).)

5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.” (40 CFR §122.22(d).)

### **C. Monitoring Reports**

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 CFR §122.22(l)(4).)
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 CFR §122.41(l)(4)(i).)
3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board. (40 CFR §122.41(l)(4)(ii).)
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 CFR §122.41(l)(4)(iii).)

### **D. Compliance Schedules**

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date. (40 CFR §122.41(l)(5).)

### **E. Twenty-Four Hour Reporting**

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall



also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 CFR §122.41(l)(6)(i).)

2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 CFR §122.41(l)(6)(ii)):
  - a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 CFR §122.41(l)(6)(ii)(A).)
  - b. Any upset that exceeds any effluent limitation in this Order. (40 CFR §122.41(l)(6)(ii)(B).)
3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 CFR §122.41(l)(6)(iii).)

#### **F. Planned Changes**

The Discharger shall give notice to the Regional Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 CFR §122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 CFR §122.41(l)(1)(i)); or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 CFR §122.41(l)(1)(ii).)
3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 CFR §122.41(l)(1)(iii).)

#### **G. Anticipated Noncompliance**

The Discharger shall give advance notice to the Regional Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with General Order requirements. (40 CFR §122.41(l)(2).)

## **H. Other Noncompliance**

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above. (40 CFR §122.41(l)(7).)

## **I. Other Information**

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information. (40 CFR §122.41(l)(8).)

## **VI. STANDARD PROVISIONS – ENFORCEMENT**

- A.** The Regional Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13385, 13386, and 13387.

## **VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS**

### **A. Publicly-Owned Treatment Works (POTWs)**

All POTWs shall provide adequate notice to the Regional Water Board of the following (40 CFR §122.42(b)):

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to sections 301 or 306 of the CWA if it were directly discharging those pollutants (40 CFR §122.42(b)(1)); and
2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order. (40 CFR §122.42(b)(2).)
3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. (40 CFR §122.42(b)(3).)

## ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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## **ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)**

The Code of Federal Regulations section 122.48 requires that all NPDES permits specify monitoring and reporting requirements. Water Code Sections 13267 and 13383 also authorize the Regional Water Quality Control Board (Regional Water Board) to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements, which implement the federal and state regulations.

### **I. GENERAL MONITORING PROVISIONS**

- A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of this Regional Water Board.
- B. Chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the California Department of Public Health (DPH). In the event a certified laboratory is not available to the Discharger, analyses performed by a noncertified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program must be kept in the laboratory and shall be available for inspection by Regional Water Board staff. The Quality Assurance-Quality Control Program must conform to USEPA guidelines or to procedures approved by the Regional Water Board.
- C. All analyses shall be performed in a laboratory certified to perform such analyses by DPH. Laboratories that perform sample analyses shall be identified in all monitoring reports.
- D. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.
- E. Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this Monitoring and Reporting Program.

## II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

**Table E-1. Monitoring Station Locations**

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	A location where a representative sample of the influent into the facility can be collected prior to any plant return flows or treatment processes.
001	EFF-001	A location where a representative sample of the effluent from the facility can be collected after all treatment processes and prior to commingling with other waste streams or being discharged into Jackson Creek. [Latitude: 38° 30' 28" N; Longitude: 120° 14' 04" W]
--	RSW-001	200 feet upstream from the point of discharge into Jackson Creek.
--	RSW-002	200 feet downstream from the point of discharge into Jackson Creek.
--	SPL-001	A location where a representative sample of the municipal water supply can be obtained.
--	BIO-001	Representative sample location for biosolids.

## III. INFLUENT MONITORING REQUIREMENTS

### A. Monitoring Location INF-001

1. The Discharger shall monitor influent to the facility at INF-001 as follows:

**Table E-2. Influent Monitoring**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	24-hr Composite <sup>1</sup>	1/week	<sup>2</sup>
	lbs/day	Calculate		
Total Suspended Solids	mg/L	24-hr Composite <sup>1</sup>	1/week	<sup>2</sup>
	lbs/day	Calculate		
Flow	mgd	Meter	Continuous	<sup>2</sup>

<sup>1</sup> 24-hour flow proportional composite.

<sup>2</sup> As required by 40 CFR Part 136.

**IV. EFFLUENT MONITORING REQUIREMENTS****A. Monitoring Location EFF-001**

1. The Discharger shall monitor effluent to Jackson Creek at EFF-001 as follows. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level:

**Table E-3. Effluent Monitoring**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
CONVENTIONALS				
Biochemical Oxygen Demand (5-day @ 20°C) <sup>1</sup>	mg/L	24-hr Composite <sup>2</sup>	2/Week	3
	lbs/day <sup>4</sup>	Calculate		
pH <sup>5</sup>	s.u.	Grab	1/Day	3
pH <sup>6</sup>	s.u.	Grab	2/Week	3
Total Suspended Solids (TSS) <sup>1</sup>	mg/L	24-hr Composite <sup>2</sup>	2/Week	3
	lbs/day <sup>4</sup>	Calculate		
INORGANICS				
Copper, Total Recoverable <sup>7</sup>	µg/L	24-hr Composite <sup>2</sup>	1/Month	3
Cyanide, Total <sup>7</sup>	µg/L	24-hr Composite <sup>2</sup>	1/Month	3
Mercury, Total Recoverable <sup>7</sup>	µg/L	24-hr Composite <sup>2</sup>	1/Quarter	3
	lbs/month	Calculate	1/Quarter	3
Zinc, Total Recoverable <sup>7</sup>	µg/L	24-hr Composite <sup>2</sup>	1/Month	3
ORGANICS				
Diazinon	µg/L	24-hr Composite <sup>2</sup>	1/Month	3
Dichlorobromomethane <sup>7</sup>	µg/L	Grab	1/Month	3
2,6-Dinitrotoluene <sup>7</sup>	µg/L	24-hr Composite <sup>2</sup>	1/Month	3
1,2-Diphenylhydrazine <sup>7</sup>	µg/L	24-hr Composite <sup>2</sup>	1/Month	3
TCDD Equivalents <sup>7,8</sup>	µg/L	24-hr Composite <sup>2</sup>	1/Year	3
Tetrachloroethene <sup>7</sup>	µg/L	Grab	1/Month	3
NON-CONVENTIONALS				
Aluminum, Total Recoverable <sup>9</sup>	µg/L	24-hr Composite <sup>2</sup>	1/Month	3
Ammonia, Total (as N) <sup>5,10</sup>	mg/L	Grab	1/Day	3
Ammonia, Total (as N) <sup>6,10</sup>	mg/L	Grab	2/Week	3
Electrical Conductivity @25°C	µmhos/cm	Grab	2/Week	3
Flow	mgd	Meter	Continuous	3
Iron, Total Recoverable	µg/L	24-hr Composite <sup>2</sup>	1/Month	3
Manganese, Total Recoverable	µg/L	24-hr Composite <sup>2</sup>	1/Month	3
Methyl Tertiary-Butyl Ether	mg/L	Grab	1/Quarter	3
Nitrate (as NO <sub>3</sub> )	mg/L	Grab	1/Week	3
Settleable Solids	ml/L	Grab	2/Week	3
Temperature <sup>5</sup>	°C	Grab	1/Day	3

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Temperature <sup>6</sup>	°C	Grab	2/Week	3
Total Coliform Organisms	MPN/100 mL	Grab	3/Week	3
Total Dissolved Solids	mg/L	Grab	1/Quarter	3
Total Residual Chlorine <sup>11</sup>	µg/L	Meter	Continuous	3
Turbidity	NTU	Meter	Continuous	3
Priority Pollutants <sup>7</sup>	µg/L	Grab	12,13	3

<sup>1</sup> The Discharger shall also calculate the % removal of the arithmetic mean of BOD<sub>5</sub> and TSS in effluent samples from the influent samples, collected over each month.

<sup>2</sup> 24-hour flow proportional composite.

<sup>3</sup> As required by 40 CFR Part 136.

<sup>4</sup> Calculated using the following equation:

$$\text{lbs/day} = \text{Flow (MGD)} \times 8.34 \times \text{Concentration (mg/L)}$$

<sup>5</sup> pH and temperature grab samples shall be taken concurrently with ammonia sampling on a daily basis to determine compliance with the interim limitations for ammonia during the period beginning on the permit effective date and ending on 17 May 2010.

<sup>6</sup> pH, ammonia, and temperature shall be sampled two times per week in order to determine compliance with the final limitations for ammonia beginning on 18 May 2010.

<sup>7</sup> For priority pollutant constituents with effluent limitations, detection limits shall be below the effluent limitations. If the lowest minimum level (ML) published in Appendix 4 of *the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Plan or SIP) is not below the effluent limitation, the detection limit shall be the lowest ML. For priority pollutant constituents without effluent limitations, the detection limits shall be equal to or less than the lowest ML published in Appendix 4 of the SIP.

<sup>8</sup> All 17 TCDD Equivalents (congeners) to be sampled annually including OctaCDD and OctaCDF.

<sup>9</sup> Compliance with the final effluent limitations for aluminum can be demonstrated using either total or acid-soluble (inductively coupled plasma/atomic emission spectrometry or inductively coupled plasma/mass spectrometry) analysis methods, as supported by USEPA's Ambient Water Quality Criteria for Aluminum document (EPA 440/5-86-008), or other standard methods that exclude aluminum silicate particles as approved by the Executive Officer.

<sup>10</sup> Ammonia monitoring shall be conducted concurrently with whole effluent toxicity monitoring.

<sup>11</sup> Total residual chlorine must be monitored with a method sensitive to and accurate at the permitted level of 0.01 mg/L.

<sup>12</sup> Priority pollutants (including all 17 TCDD equivalents) shall be sampled quarterly (for one year) during the third year following the date of permit adoption and shall be conducted concurrently with up stream receiving water monitoring for hardness (as CaCO<sub>3</sub>) and pH. The Discharger is not required to conduct effluent monitoring for priority pollutants that have already been sampled in a given quarter, as required in Table E-3.

<sup>13</sup> To be conducted concurrent with receiving surface water sampling for priority pollutants.

## V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. **Acute Toxicity Testing.** The Discharger shall conduct acute toxicity testing to determine whether the effluent is contributing acute toxicity to the receiving water. The Discharger shall meet the following acute toxicity testing requirements:

1. Monitoring Frequency – The Discharger shall perform semi-annual acute toxicity testing, concurrent with effluent ammonia sampling.

2. Sample Types – For static non-renewal and static renewal testing, the samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at the effluent monitoring location EFF-001. T  
E  
N
  3. Test Species – Test species shall be larval stage rainbow trout (*Oncorhynchus mykiss*). T
  4. Methods – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition. Temperature, total residual chlorine, and pH shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer. A  
T  
I
  5. Test Failure – If an acute toxicity test does not meet all test acceptability criteria, as specified in the test method, the Discharger must re-sample and re-test as soon as possible, not to exceed 7 days following notification of test failure. V  
E
- B. Chronic Toxicity Testing.** The Discharger shall conduct three species chronic toxicity testing to determine whether the effluent is contributing chronic toxicity to the receiving water. The Discharger shall meet the following chronic toxicity testing requirements:
1. Monitoring Frequency – The Discharger shall perform semi-annual three species chronic toxicity testing. O  
R  
D
  2. Sample Types – Effluent samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at the effluent monitoring location specified in the Monitoring and Reporting Program. The receiving water control shall be a grab sample obtained from the RSW-001 sampling location, as identified in the Monitoring and Reporting Program. E  
R
  3. Sample Volumes – Adequate sample volumes shall be collected to provide renewal water to complete the test in the event that the discharge is intermittent.
  4. Test Species – Chronic toxicity testing measures sublethal (e.g. reduced growth, reproduction) and/or lethal effects to test organisms exposed to an effluent compared to that of the control organisms. The Discharger shall conduct chronic toxicity tests with:
    - The cladoceran, water flea, *Ceriodaphnia dubia* (survival and reproduction test);
    - The rainbow trout, *Oncorhynchus mykiss* (larval survival and growth test); and
    - The green alga, *Selenastrum capricornutum* (growth test).
  5. Methods – The presence of chronic toxicity shall be estimated as specified in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition*, EPA/821-R-02-013, October 2002.



6. Reference Toxicant – As required by the SIP, all chronic toxicity tests shall be conducted with concurrent testing with a reference toxicant and shall be reported with the chronic toxicity test results.
7. Dilutions – The chronic toxicity testing shall be performed using the dilution series identified in Table E-4, below. The receiving water control shall be used as the diluent (unless the receiving water is toxic).

If the receiving water is toxic, laboratory control water may be used as the diluent, in which case, the receiving water should still be sampled and tested to provide evidence of its toxicity.

8. Test Failure –The Discharger must re-sample and re-test as soon as possible, but no later than fourteen (14) days after receiving notification of a test failure. A test failure is defined as follows:
  - a. The reference toxicant test or the effluent test does not meet all test acceptability criteria as specified in the *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition*, EPA/821-R-02-013, October 2002 (Method Manual), and its subsequent amendments or revisions; or
  - b. The percent minimum significant difference (PMSD) measured for the test exceeds the upper PMSD bound variability criterion in Table 6 on page 52 of the Method Manual. (A retest is only required in this case if the test results do not exceed the monitoring trigger specified in Special Provisions VI.C.2.a.iii.)

**Table E-4. Chronic Toxicity Testing Dilution Series**

Sample	Dilutions (%)					Controls	
	100	75	50	25	12.5	Receiving Water	Laboratory Water
% Effluent	100	75	50	25	12.5	0	0
% Receiving Water	0	25	50	75	87.5	100	0
% Laboratory Water	0	0	0	0	0	0	100

- C. WET Testing Notification Requirements.** The Discharger shall notify the Regional Water Board within 24-hrs after the receipt of test results exceeding the monitoring trigger during regular or accelerated monitoring, or an exceedance of the acute toxicity effluent limitation. T  
E  
N
- D. WET Testing Reporting Requirements.** All toxicity test reports shall include the contracting laboratory's complete report provided to the Discharger and shall be in accordance with the appropriate "Report Preparation and Test Review" sections of the method manuals. At a minimum, whole effluent toxicity monitoring shall be reported as follows: T  
A  
T  
I  
V  
E  
O  
R  
D  
E  
R
1. **Chronic WET Reporting.** Regular chronic toxicity monitoring results shall be reported to the Regional Water Board within 30 days following completion of the test, and shall contain, at minimum:
    - a. The results expressed in TUC, measured as 100/NOEC, and also measured as 100/LC<sub>50</sub>, 100/EC<sub>25</sub>, 100/IC<sub>25</sub>, and 100/IC<sub>50</sub>, as appropriate.
    - b. The statistical methods used to calculate endpoints;
    - c. The statistical output page, which includes the calculation of the percent minimum significant difference (PMSD);
    - d. The dates of sample collection and initiation of each toxicity test; and
    - e. The results compared to the numeric toxicity monitoring trigger.

Additionally, the monthly discharger self-monitoring reports shall contain an updated chronology of chronic toxicity test results expressed in TUC, and organized by test species, type of test (survival, growth or reproduction), and monitoring frequency, i.e., either quarterly, monthly, accelerated, or TRE.
  2. **Acute WET Reporting.** Acute toxicity test results shall be submitted with the monthly discharger self-monitoring reports and reported as percent survival.
  3. **TRE Reporting.** Reports for Toxicity Reduction Evaluations shall be submitted in accordance with the schedule contained in the Discharger's approved TRE Work Plan.
  4. **Quality Assurance (QA).** The Discharger must provide the following information for QA purposes:
    - a. Results of the applicable reference toxicant data with the statistical output page giving the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD, and dates tested.
    - b. The reference toxicant control charts for each endpoint, which include summaries of reference toxicant tests performed by the contracting laboratory.

- c. Any information on deviations or problems encountered and how they were dealt with.

## VI. LAND DISCHARGE MONITORING REQUIREMENTS

[NOT APPLICABLE]

## VII. RECLAMATION MONITORING REQUIREMENTS

[NOT APPLICABLE]

## VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

### A. Monitoring Location RSW-001 and RSW-002

1. The Discharger shall monitor Jackson Creek at RSW-001 and RSW-002 as follows:

**Table E-5. Receiving Water Monitoring Requirements**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total Ammonia (as N)	mg/L	Grab	1/Week	1
Dissolved Oxygen	mg/L	Grab	2/Week	1
Electrical Conductivity @ 25°C	µmhos/cm	Grab	2/Week	1
Fecal Coliform Organisms	MPN/100 mL	Grab	1/Quarter	1
Flow <sup>2</sup>	MGD	Grab	1/Day	1
Hardness (as CaCO <sub>3</sub> ) <sup>3</sup>	mg/L	Grab	1/Quarter	1
pH <sup>3,4</sup>	s.u.	Grab	2/Week	1
Radionuclides	PCi/l	Grab	1/Year	1
Temperature <sup>4</sup>	°F	Grab	2/Week	1
Turbidity	NTU	Grab	2/Week	1
Total Residual Chlorine	mg/L	Grab	2/Week	1
Priority Pollutants <sup>2</sup>	µg/L	Grab	6	1,5

<sup>1</sup> As specified in 40 CFR Part 136.

<sup>2</sup> Only required to monitor at RSW-001 (upstream).

<sup>3</sup> Hardness and pH shall also be conducted concurrently during priority pollutant monitoring.

<sup>4</sup> To be conducted concurrently with effluent monitoring for ammonia.

<sup>5</sup> For priority pollutants, constituents with detection limits shall be equal to or less than the lowest ML published in Appendix 4 of the SIP.

<sup>6</sup> Priority pollutants shall be sampled quarterly during the third year following the date of permit adoption and shall be conducted concurrently with up stream receiving water monitoring for hardness (as CaCO<sub>3</sub>) and pH and effluent monitoring for priority pollutants.

## IX. OTHER MONITORING REQUIREMENTS

### A. Biosolids

#### 1. Monitoring Location BIO-001

1. A composite sample of sludge shall be collected annually at Monitoring Location BIO-001 in accordance with USEPA's *POTW Sludge Sampling and Analysis Guidance Document*, August 1989, and tested for priority pollutants listed in 40 CFR section 122 Appendix D, Tables II and III (excluding total phenols).
2. A composite sample of sludge shall be collected when sludge is removed from the ponds for disposal in accordance with USEPA's *POTW Sludge Sampling and Analysis Guidance Document*, August 1989, and tested for the metals listed in Title 22.
3. Sampling records shall be retained for a minimum of **5 years**. A log shall be kept of sludge quantities generated and of handling and disposal activities. The frequency of entries is discretionary; however, the log should be complete enough to serve as a basis for part of the annual report.
4. Upon removal of sludge, the Discharger shall submit characterization of sludge quality, including sludge percent solids and quantitative results of chemical analysis for the priority pollutants listed in 40 CFR 122 Appendix D, Tables II and III (excluding total phenols). Suggested methods for analysis of sludge are provided in USEPA publications titled "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods" and "Test Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater". Recommended analytical holding times for sludge samples should reflect those specified in 40 CFR 136.6.3(e). Other guidance is available in USEPA's *POTW Sludge Sampling and Analysis Guidance Document*, August 1989.

### B. Municipal Water Supply

#### 1. Monitoring Location SPL-001

The Discharger shall monitor the Municipal Water Supply at SPL-001 as follows. A sampling station shall be established where a representative sample of the municipal water supply can be obtained. Municipal water supply samples shall be collected at approximately the same time as effluent samples.

**Table E-6. Municipal Water Supply Monitoring Requirements**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total Dissolved Solids	mg/L	Grab	1/Year	1
Electrical Conductivity @ 25°C <sup>2</sup>	µmhos/cm	Grab	1/Year	1
Standard Minerals <sup>3</sup>	mg/L	Grab	1/Year	1

- 
- <sup>1</sup> As specified in 40 CFR Part 136.
- <sup>2</sup> If the water supply is from more than one source, the EC shall be reported as a weighted average and include copies of supporting calculations.
- <sup>3</sup> Standard minerals shall include all major cations and anions and include verification that the analysis is complete (i.e., cation/anion balance).

## X. REPORTING REQUIREMENTS

### A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.
2. Upon written request of the Regional Water Board, the Discharger shall submit a summary monitoring report. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year(s).
3. **Compliance Time Schedules.** For compliance time schedules included in the Order, the Discharger shall submit to the Regional Water Board, on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Water Board by letter when it returns to compliance with the compliance time schedule.
4. The Discharger shall report to the Regional Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986.
5. **Reporting Protocols.** The Discharger shall report with each sample result the applicable Reporting Level (RL) and the current Method Detection Limit (MDL), as determined by the procedure in Part 136.
  - a. The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:
  - b. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
  - c. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the

- reported result. Numerical estimates of data quality may be percent accuracy ( $\pm$  a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.
- d. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.
  - e. Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from *extrapolation* beyond the lowest point of the calibration curve.
6. **Multiple Sample Data.** When determining compliance with an AMEL, AWEL, or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:
- a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
  - b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

## B. Self Monitoring Reports (SMRs)

1. At any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit Self-Monitoring Reports (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (<http://www.waterboards.ca.gov/ciwqs/index.html>). Until such notification is given, the Discharger shall submit hard copy SMRs. The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.
2. Monitoring results shall be submitted to the Regional Water Board by the **first day** of the second month following sample collection. Quarterly and annual monitoring results shall be submitted by the **first day of the second month following each calendar quarter, semi-annual period, and year**, respectively.
3. In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly

whether the discharge complies with waste discharge requirements. The highest daily maximum for the month, monthly and weekly averages, and medians, and removal efficiencies (%) for BOD and Total Suspended Solids, shall be determined and recorded as needed to demonstrate compliance.

4. With the exception of flow, all constituents monitored on a continuous basis (metered), shall be reported as daily maximums, daily minimums, and daily averages; flow shall be reported as the total volume discharged per day for each day of discharge.
5. If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the discharge monitoring report form. Such increased frequency shall be indicated on the discharge monitoring report form.
6. A letter transmitting the self-monitoring reports shall accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain the penalty of perjury statement by the Discharger, or the Discharger's authorized agent, as described in the Standard Provisions.
7. SMRs must be submitted to the Regional Water Board, signed and certified as required by the Standard Provisions (Attachment D), to the address listed below:

Regional Water Quality Control Board  
Central Valley Region  
NPDES Compliance and Enforcement Unit  
11020 Sun Center Dr., Suite #200  
Rancho Cordova, CA 95670-6114

8. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

**Table E-7. Monitoring Periods and Reporting Schedule**

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
Continuous	Permit effective date	All	First day of second month following month of sampling
1/Day	Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	First day of second month following month of sampling

1/Week	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	First day of second month following month of sampling
2/Week	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	First day of second month following month of sampling
3/Week	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	First day of second month following month of sampling
1/Month	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	First day of calendar month through last day of calendar month	First day of second month following month of sampling
1/Quarter	Closest of 1 January, 1 April, 1 July, or 1 October following (or on) permit effective date	1 January through 31 March 1 April through 30 June 1 July through 30 September 1 October through 31 December	1 May 1 August 1 November 1 February
2/Year	Closest of 1 January or 1 July following (or on) permit effective date	1 January through 30 June 1 July through 31 December	1 August 1 February
1/Year	1 January following (or on) permit effective date>	1 January through 31 December	1 February

### C. Discharge Monitoring Reports (DMRs)

- As described in Section X.B.1 above, at any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of Discharge Monitoring Reports (DMRs). Until such notification is given, the Discharger shall submit DMRs in accordance with the requirements described below.
- DMRs must be signed and certified as required by the standard provisions (Attachment D). The Discharge shall submit the original DMR and one copy of the DMR to the address listed below:

Standard Mail	FedEx/UPS/ Other Private Carriers
State Water Resources Control Board Division of Water Quality c/o DMR Processing Center PO Box 100 Sacramento, CA 95812-1000	State Water Resources Control Board Division of Water Quality c/o DMR Processing Center 1001 I Street, 15 <sup>th</sup> Floor Sacramento, CA 95814

- All discharge monitoring results must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self-generated cannot be accepted unless they follow the exact same format as EPA form 3320-1.

### D. Other Reports



1. **Progress Reports.** As specified in the compliance time schedules required in Special Provisions VI, progress reports shall be submitted in accordance with the following reporting requirements. At minimum, the progress reports shall include a discussion of the status of final compliance, whether the Discharger is on schedule to meet the final compliance date, and the remaining tasks to meet the final compliance date.

**Table E-8. Reporting Requirements for Special Provisions Progress Reports**

Special Provision	Reporting Requirements
Pollution Prevention Plan for aluminum; ammonia; copper; cyanide; diazinon; dichlorobromomethane; 1,2-diphenylhydrazine; 2,6-dinitrotoluene; tetrachloroethene; and zinc.	<b>1 June</b> , annually, after approval of work plan
Compliance Schedules for Final Effluent Limitations for aluminum; ammonia; copper; cyanide; diazinon; dichlorobromomethane; 1,2-diphenylhydrazine; 2,6-dinitrotoluene; tetrachloroethene; and zinc, compliance with final effluent limitations.	<b>1 June</b> , annually, until final compliance
Compliance Schedules for Ensuring Compliance with Prohibition to Discharge to Jackson Creek When Receiving Water Flows Do Not Provide a Minimum of 20:1 Dilution of the Facility's Effluent.	<b>1 June</b> , annually, until final compliance

2. Within **60 days** of permit adoption, the Discharger shall submit a report outlining minimum levels, method detection limits, and analytical methods for approval, with a goal to achieve detection levels below applicable water quality criteria. At a minimum, the Discharger shall comply with the monitoring requirements for CTR constituents as outlined in Section 2.3 and 2.4 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*, adopted 2 March 2000 by the State Water Resources Control Board. All peaks identified by analytical methods shall be reported.
3. The Discharger's sanitary sewer system collects wastewater using sewers, pipes, pumps, and/or other conveyance systems and directs the raw sewage to the wastewater treatment plant. A "sanitary sewer overflow" is defined as a discharge to ground or surface water from the sanitary sewer system at any point upstream of the wastewater treatment plant. Sanitary sewer overflows are prohibited by this Order. All violations must be reported as required in Standard Provisions. Facilities (such as wet wells, regulated impoundments, tanks, highlines, etc.) may be part of a sanitary sewer system and discharges to these facilities are not considered sanitary sewer overflows, provided that the waste is fully contained within these temporary storage facilities.
4. **Annual Operations Report.** By **30 January** of each year, the Discharger shall submit a written report to the Executive Officer containing the following:
  - a. The names, certificate grades, and general responsibilities of all persons employed at the Facility.
  - b. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations.

- c. A statement certifying when the flow meter(s) and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration.
- d. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the wastewater treatment plant as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.
- e. The Discharger may also be requested to submit an annual report to the Regional Water Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

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## ATTACHMENT F – FACT SHEET

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**ATTACHMENT F – FACT SHEET**

As described in section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for Dischargers in California. Only those sections or subsections of this Order that are specifically identified as “not applicable” have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as “not applicable” are fully applicable to this Discharger.

**I. PERMIT INFORMATION**

The following table summarizes administrative information related to the facility.

**Table F-1. Facility Information**

<b>WDID</b>	---
<b>Discharger</b>	City of Jackson
<b>Name of Facility</b>	Wastewater Treatment Plant
<b>Facility Address</b>	39 North Highway 49-88
	Jackson, CA 95642
	Amador County
<b>Facility Contact, Title and Phone</b>	Terry Coulter, Senior Operator, (209) 223-1607
<b>Authorized Person to Sign and Submit Reports</b>	Terry Watson, Superintendent of Public Works, (209) 223-1607
<b>Mailing Address</b>	33 Broadway, Jackson, CA 95642
<b>Billing Address</b>	Same as mailing address
<b>Type of Facility</b>	Publicly Owned Treatment Works
<b>Major or Minor Facility</b>	Minor
<b>Threat to Water Quality</b>	1
<b>Complexity</b>	A
<b>Pretreatment Program</b>	N
<b>Reclamation Requirements</b>	Not Applicable
<b>Facility Permitted Flow</b>	0.71 million gallons per day (mgd)
<b>Facility Design Flow</b>	0.71 mgd
<b>Watershed</b>	Mokelumne River
<b>Receiving Water</b>	Jackson Creek, a tributary of the Delta via Amador Lake, Dry Creek, and the Mokelumne River
<b>Receiving Water Type</b>	Inland surface water

- A. The City of Jackson (hereinafter Discharger) is the owner and operator of the Jackson Wastewater Treatment Plant (hereinafter Facility), a publicly owned treatment works (POTW).

For the purposes of this Order, references to the “discharger” or “permittee” in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

- B.** The Facility discharges wastewater to Jackson Creek, a water of the United States, and a tributary to the Delta, via Amador Lake, Dry Creek, and the Mokelumne River. The Discharger is currently regulated by Order No. 5-00-173 which was adopted on 16 June 2000 and expired on 1 June 2005. The terms and conditions of the current Order have been automatically continued and remain in effect until new Waste Discharge Requirements (WDRs) and National Pollution Discharge Elimination System (NPDES) permit are adopted pursuant to this Order.
- C.** The Discharger filed a report of waste discharge and submitted an application for renewal of its WDRs and NPDES permit on 7 December 2004. Supplemental information was requested on 31 October 2006 and received on 20 November 2006. A site visit was conducted on 25 August 2006 and 9 August 2007, to observe operations and collect additional data to develop permit limitations and conditions.

## II. FACILITY DESCRIPTION

The Discharger owns and operates a wastewater collection, treatment and disposal system for the City of Jackson, serving a population of approximately 4,000 individuals with approximately 1,650 connections. The Facility design flow capacity is 0.71 mgd. Information collected during a site visit on 25 August 2006 indicated an average daily flow of approximately 0.63 mgd at the facility, with an average dry weather flow of approximately 0.55 mgd. During the site visit conducted on 25 August 2006, a facility representative stated that the Facility does not have any known significant industrial users. During an additional site visit conducted on 9 August 2007, the Facility representative stated that the Facility is capable of meeting Title 22 tertiary effluent with current facilities plus minor upgrades to achieve the necessary redundancy and reliability of treatment.

### A. Description of Wastewater and Biosolids Treatment or Controls

The treatment train consists of a mechanical bar screen and spiral augur with a washer compactor for screenings, two oxidation ditches (only one is used at a time), two secondary clarifiers (only one is used during the summer, both are used during the winter months), chlorine injection, four single media sand filters (two trains of two beds), chlorine contact basins, and dechlorination. Solids are directed to an aerated holding tank for digestion, and then to a belt filter press. Solids are hauled off-site to Forward Landfill in Manteca.

Order No. 5-00-173 required the City of Jackson to study the feasibility of modifying its effluent disposal practices to be in concert with the Department of Public Health (DPH) guidance regarding the discharge of effluent to surface waters used for drinking water supplies. Jackson Creek and Amador Lake are domestic water supplies. On a site-specific basis, DPH is concerned that Jackson Creek may contain more than 5 percent of flow from the WWTP effluent at times when these waters are being used by existing residents downstream of the WWTP as domestic water supplies. There are

many months each year when the Jackson Creek flow to Lake Amador would be more than 5 percent WWTP effluent. The City of Jackson has identified potential alternatives to discharging into Jackson Creek as follows:

- Reclamation during summer/autumn. Winter/spring effluent could be stored or discharged to a surface water with adequate dilution.
- Land application for either crop irrigation or no beneficial purpose. As with reclamation, winter/spring effluent could be stored or discharged to a surface water with adequate dilution.
- Discharge to a larger surface water that can provide adequate dilution.

Of these alternative disposal methods, and based on a number of conflicting concerns, the Discharger has indicated in their 12 May 2004 Wastewater Facilities Planning Report, that reclamation and discharge to a larger surface water appear to be the most feasible. The Discharger is currently assessing the potential for reclamation and the use of a different receiving water with a larger flow volume (the Mokelumne River).

Two letters from DPH, dated 13 July 2007 and 12 June 2003, signed by Joseph Spano, PE, District Engineer, Drinking Water Field Operations Branch of the Stockton Branch, suggests that DPH is concerned with the site-specific impact of the City of Jackson discharge may have on the beneficial use of the surface water as a domestic water supply source, particularly when the flow in Jackson Creek does not provide 20:1 dilution. The 13 July 2007 DPH letter recommends Title 22 tertiary treatment of the wastewater plus a 20:1 dilution ratio (creek-to-discharge flow) to address a downstream trailer residential park and recreational area in which the residents use Jackson Creek water for drinking water purposes. In addition to water quality needed to protect human health, the DPH letters address perception of providing residents relatively undiluted treatment plant effluent as a domestic drinking water source. The recommendation in the letters specified above are site-specific recommendations, not DPH department policy.

The unlined Amador Canal has historically contributed a significant flow to various forks of Jackson Creek via overflows and subsurface contributions. The upstream base flow of Jackson Creek has recently been reduced due to recent repairs of the upstream stretch of the Amador Canal which no longer leaks flow into the Creek. The Amador Water Agency has current plans for the construction of a piping system for the Amador Canal flow, which is expected to eliminate contributions of additional subsurface flow to Jackson Creek. In its 13 July 2007 letter, DPH indicates that these upstream Amador Canal repairs and construction projects will exacerbate the intensity of the public health impacts of the Facility wastewater discharge due to the reduced upstream base flow in Jackson Creek.

Additionally, a letter dated 18 July 2003 from the Department of Fish and Game (DFG), and signed by Larry L. Eng. Ph.D., Deputy Regional Manager, indicates that “unless concentrations of contaminants increase, continued discharges of treated wastewater will benefit the fish and wildlife of the creek and associated habitat.” The



DFG based this assessment on the contributed flow to the creek, and not from a public health perspective.

## B. Discharge Points and Receiving Waters

1. The Facility is located in Section 29, T6N, R11E, MDB&M, as shown in Attachment B (Figure B-1), a part of this Order.
2. Treated municipal wastewater is discharged at Discharge Point No. 001 to Jackson Creek, a water of the United States and a tributary to the Delta via the Mokelumne River, Dry Creek, and Amador at a point latitude 38° 30' 28" N and longitude 120° 14' 04" W.

## C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

Effluent limitations contained in the existing Order for discharges from Discharge Point No. 001 (Monitoring Location No. 001) and representative monitoring data from the term of the previous Order are as follows:

**Table F-2. Historic Effluent Limitations and Monitoring Data**

Parameter	Units	Effluent Limitations				Range of reported values from January 2002 to July 2006
		Average Monthly	Average Weekly	7-Day Median	Maximum Daily	
Biochemical Oxygen Demand (5-day @ 20 Deg. C)	mg/L	10	15	--	30	1 – >25
	lbs/day	60	90	--	180	3.8 – 93.9
Total Suspended Solids	mg/L	10	15	--	30	1.7 – 31
	lbs/day	60	90	--	180	6.6 – 103.2
pH	s.u.	--	--	--	(1)	6.5 – 8.6
Total Coliform	MPN/100 mL	--	--	2.2	23	<2 - >2400
Settleable Solids	ml/L	0.1	--	--	0.2	<0.1 – 0.1
Turbidity	NTU	2	--	--	5	0.2 - 26
Ammonia	mg/L	(2)	--	--	--	<0.5 - 16
Nitrate (NO <sub>3</sub> )	mg/L	45	--	--	--	0.58 – 57.6
Chlorine Residual	mg/L	--	0.01	--	0.02	<0.02 – 0.4
Discharge Flow <sup>(3)</sup>	MGD	--	--	--	--	0.346-2.936

(1) The discharger shall not have a pH less than 6.5 nor greater than 8.5.

(2) Floating effluent limitation based on pH and temperature.

(3) Order No. 5-00-173 limits the WWTP effluent flow to a 0.71 mgd average dry weather flow.

## D. Compliance Summary

A review of the Discharger's monitoring data from January 2002 through July 2006 indicate overall satisfactory compliance with the effluent limitations required in Order No. 5-00-173. However, multiple exceedances of the total coliform organisms daily maximum and average monthly effluent limitations occurred over the previous permit term. Also, infrequent exceedances were reported for the turbidity daily maximum and average monthly effluent limitations, and ammonia, pH, BOD<sub>5</sub>, TSS, and total residual chlorine.

#### **E. Planned Changes**

**[NOT APPLICABLE]**

### **III. APPLICABLE PLANS, POLICIES, AND REGULATIONS**

The requirements contained in this Order are based on the applicable plans, policies, and regulations identified in section II of the Limitations and Discharge Requirements (Findings). This section provides supplemental information, where appropriate, for the plans, policies, and regulations relevant to the discharge.

#### **A. Legal Authority**

See Limitations and Discharge Requirements - [Findings](#), Section II.C.

#### **B. California Environmental Quality Act (CEQA)**

See Limitations and Discharge Requirements - Findings, Section II.E.

#### **C. State and Federal Regulations, Policies, and Plans**

- 1. Water Quality Control Plans.** The Regional Water Board adopted a *Water Quality Control Plan, Fourth Edition (Revised August 2006), for the Sacramento and San Joaquin River Basins* (Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, State Water Board Resolution No. 88-63 requires that, with certain exceptions, the Regional Water Board assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in the Basin Plan. The beneficial uses of Jackson Creek, a tributary to the Mokelumne River within the Delta, via Amador Lake and Dry Creek, downstream of the discharge are municipal and domestic supply, agricultural supply for irrigation and stockwatering, industrial process supply and service supply, contact water recreation, other non-contact water recreation, warm freshwater aquatic habitat, cold freshwater aquatic habitat, warm and cold fish migration habitat, warm spawning habitat, wildlife habitat, and navigation.

The Basin Plan on page II-1.00 states: "*Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning...*" and with respect to disposal of wastewaters states that "...disposal of wastewaters is [not] a

*prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses.”*

The federal CWA section 101(a)(2), states: “*it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved by July 1, 1983.*” Federal Regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Federal Regulations, 40 CFR sections 131.2 and 131.10, require that all waters of the State regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shell fish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. Section 131.3(e), 40 CFR, defines existing beneficial uses as those uses actually attained after 28 November 1975, whether or not they are included in the water quality standards. Federal Regulation, 40 CFR section 131.10, requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

This Order contains effluent limitations requiring a tertiary level of treatment, or equivalent, which is necessary to protect the beneficial uses of the receiving water. The Regional Water Board has considered the factors listed in CWC section 13241 in establishing these requirements, as discussed in more detail in the Fact Sheet, Attachment F, section IV.B.

2. **Antidegradation Policy.** Section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California’s antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Regional Water Board’s Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. As discussed in detail in the Fact Sheet (Attachment F, Section IV.D.4.) the discharge is consistent with the antidegradation provisions of 40 CFR section 131.12 and State Water Board Resolution No. 68-16.
3. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at title 40, Code of Federal Regulations section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. Compliance with the Anti-Backsliding requirements is discussed in Section IV.D.3.
4. **Emergency Planning and Community Right to Know Act.** Section 13263.6(a), California Water Code, requires that “*the Regional Water Board shall prescribe effluent limitations as part of the waste discharge requirements of a POTW for all*

*substances that the most recent toxic chemical release data reported to the state emergency response commission pursuant to Section 313 of the Emergency Planning and Community Right to Know Act of 1986 (42 U.S.C. Sec. 11023) (EPCRA) indicate as discharged into the POTW, for which the State Water Board or the Regional Water Board has established numeric water quality objectives, and has determined that the discharge is or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to, an excursion above any numeric water quality objective”.*

The most recent toxic chemical data report does not indicate any reportable off-site releases or discharges to the collection system for this facility. Therefore, a reasonable potential analysis based on information from Emergency Planning and Community Right to Know Act (EPCRA) cannot be conducted. Based on information from EPCRA, there is no reasonable potential to cause or contribute to an excursion above any numeric water quality objectives included within the Basin Plan or in any State Water Board plan, so no effluent limitations are included in this permit pursuant to CWC section 13263.6(a).

However, as detailed elsewhere in this Order, available effluent data indicate that there are constituents present in the effluent that have a reasonable potential to cause or contribute to exceedances of water quality standards and require inclusion of effluent limitations based on federal and state laws and regulations.

5. **Stormwater Requirements.** USEPA promulgated Federal Regulations for storm water on 16 November 1990 in 40 CFR Parts 122, 123, and 124. The NPDES Industrial Storm Water Program regulates storm water discharges from wastewater treatment facilities. Wastewater treatment plants are applicable industries under the stormwater program and are obligated to comply with the Federal Regulations.
6. **Endangered Species Act.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

#### **D. Impaired Water Bodies on CWA 303(d) List**

1. Under Section 303(d) of the 1972 Clean Water Act, states, territories and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 30 November 2006 USEPA gave approval to California's 2006 Section 303(d) List of Water Quality Limited Segments. The Basin Plan references this list of Water Quality Limited Segments (WQLSs), which are defined as “...those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet

*(or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 CFR 130, et seq.).*” The Basin Plan also states, “*Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLSs]. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment.*” Jackson Creek, Lake Amador, and the upper Mokelumne River are not listed on the 303(d) list. However, the lower portion of Mokelumne River is listed for copper and zinc.

2. **Total Maximum Daily Loads.** The USEPA requires the Regional Water Board to develop total maximum daily loads (TMDLs) for each 303(d) listed pollutant and water body combination. No TMDLs have been developed for the lower portion of Mokelumne River.

#### E. Other Plans, Policies and Regulations

1. The discharge authorized herein and the treatment and storage facilities associated with the discharge of treated municipal wastewater, except for discharges of residual sludge and solid waste, are exempt from the requirements of Title 27, California Code of Regulations (CCR), section 20005 *et seq.* (hereafter Title 27). The exemption, pursuant to Title 27 CCR section 20090(a), is based on the following:
  - a. The waste consists primarily of domestic sewage and treated effluent;
  - b. The waste discharge requirements are consistent with water quality objectives; and
  - c. The treatment and storage facilities described herein are associated with a municipal wastewater treatment plant.

#### IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

Effluent limitations and toxic and pretreatment effluent standards established pursuant to Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act (CWA) and amendments thereto are applicable to the discharge.

The Federal CWA mandates the implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state or federal law [33 U.S.C., § 1311(b)(1)(C); 40 CFR §122.44(d)(1)]. NPDES permits must incorporate discharge limits necessary to ensure that water quality standards are met. This requirement applies to narrative criteria as well as to criteria specifying maximum amounts of particular pollutants. Pursuant to Federal Regulations, 40 CFR §122.44(d)(1)(i), NPDES permits must contain limits that control all pollutants that “*are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality.*” Federal Regulations, 40 CFR §122.44(d)(1)(vi), further provide that “[w]here a state has not established a water quality criterion for a specific chemical pollutant that is present in an

*effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits."*

The CWA requires point source discharges to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations: 40 CFR §122.44(a) requires that permits include applicable technology-based limitations and standards, and 40 CFR §122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water where numeric water quality objectives have not been established. The Regional Water Board's Basin Plan, page IV-17.00, contains an implementation policy ("Policy for Application of Water Quality Objectives") that specifies that the Regional Water Board "*will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives.*" This Policy complies with 40 CFR §122.44(d)(1). With respect to narrative objectives, the Regional Water Board must establish effluent limitations using one or more of three specified sources, including (1) USEPA's published water quality criteria, (2) a proposed state criterion (*i.e.*, water quality objective) or an explicit state policy interpreting its narrative water quality criteria (*i.e.*, the Regional Water Board's "Policy for Application of Water Quality Objectives")(40 CFR §§122.44(d)(1) (vi) (A), (B) or (C)), or (3) an indicator parameter. The Basin Plan contains a narrative objective requiring that: "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life*" (narrative toxicity objective). The Basin Plan requires the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, discoloration, toxic substances, radionuclides, or taste and odor producing substances that adversely affect beneficial uses. The Basin Plan states that material and relevant information, including numeric criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. The Basin Plan also limits chemical constituents in concentrations that adversely affect surface water beneficial uses. For waters designated as municipal, the Basin Plan specifies that, at a minimum, waters shall not contain concentrations of constituents that exceed Maximum Contaminant Levels (MCLs) of CCR Title 22. The Basin Plan further states that, to protect all beneficial uses, the Regional Water Board may apply limits more stringent than MCLs.

## **A. Discharge Prohibitions**

1. As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the treatment facility. Federal Regulations, 40 CFR §122.41 (m), define "bypass" as the intentional diversion of waste streams from any portion of a treatment facility. This section of the Federal Regulations, 40 CFR §122.41 (m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. In considering the Regional Water Board's prohibition of bypasses, the State Water Board adopted a precedential decision, Order No. WQO 2002-0015, which cites the Federal Regulations, 40 CFR

§122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.

2. The Regional Water Board concurs with DPH's recommendation that discharges from wastewater treatment plants to municipal water supplies maintain a minimum of 20:1 dilution to ensure the protection of the downstream domestic beneficial use of Jackson Creek and public health. Discharge Prohibition III.E prohibits the discharge of wastewater by the Discharger to Jackson Creek, five (5) years following the adoption date of the Order, when a minimum dilution of 20:1 is not provided by the receiving water.

## **B. Technology-Based Effluent Limitations**

### **1. Scope and Authority**

Regulations promulgated in section 125.3(a)(1) require technology-based effluent limitations for municipal dischargers to be placed in NPDES permits based on Secondary Treatment Standards or Equivalent to Secondary Treatment Standards.

The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for POTWs [defined in section 304(d)(1)]. Section 301(b)(1)(B) of that Act requires that such treatment works must, as a minimum, meet effluent limitations based on secondary treatment as defined by the USEPA Administrator.

Based on this statutory requirement, USEPA developed secondary treatment regulations, which are specified in Part 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of 5-day biochemical oxygen demand (BOD<sub>5</sub>), total suspended solids (TSS), and pH.

### **2. Applicable Technology-Based Effluent Limitations**

- a. **BOD<sub>5</sub> and TSS.** Federal Regulations, 40 CFR Part 133, establish the minimum weekly and monthly average level of effluent quality attainable by secondary treatment for BOD<sub>5</sub> and TSS. As discussed in the Findings for Order No. 5-00-173, tertiary treatment is necessary to protect the beneficial uses of the receiving stream and the final effluent limitations for BOD<sub>5</sub> and TSS are based on the technical capability of the tertiary process. BOD<sub>5</sub> is a measure of the amount of oxygen used in the biochemical oxidation of organic matter. The secondary and tertiary treatment standards for BOD<sub>5</sub> and TSS are indicators of the effectiveness of the treatment processes. The principal design parameter for wastewater treatment plants is the daily BOD<sub>5</sub> and TSS loading rates and the corresponding removal rate of the system. In applying 40 CFR Part 133 for weekly and monthly average BOD<sub>5</sub> and TSS limitations, the application of tertiary treatment processes results in the ability to achieve lower levels for BOD<sub>5</sub> and TSS than the secondary standards currently prescribed; the 30-day average BOD<sub>5</sub> and TSS limitations are 10 mg/L, which are technically based on the capability of a tertiary

system. In addition to the average weekly and average monthly effluent limitations, a daily maximum effluent limitation for BOD<sub>5</sub> and TSS is included in the Order to ensure that the treatment works are not organically overloaded and operate in accordance with design capabilities. See Table F-3 for final technology-based effluent limitations required by this Order. In addition, 40 CFR §133.102, in describing the minimum level of effluent quality attainable by secondary treatment, states that the 30-day average percent removal shall not be less than 85 percent. If 85 percent removal of BOD<sub>5</sub> and TSS must be achieved by a secondary treatment plant, it must also be achieved by a tertiary (i.e., treatment beyond secondary level) treatment plant. This Order contains a limitation requiring an average of 85 percent removal of BOD<sub>5</sub> and TSS over each calendar month.

- b. **pH.** Federal Regulations, 40 CFR Part 133, establishes technology-based effluent limitations for pH. The secondary treatment standards require the pH of the effluent to be no lower than 6.0 and no greater than 9.0 standard units. In a letter dated 30 July 2007, the Discharger requested an upper effluent pH limitation of 7.5 which reflects the Facility's actual process limit. However, data collected over the previous permit term indicate that pH in the effluent exceeded 7.5 on several occasions, with a maximum reported pH value of 8.0. Therefore, at the request of the Discharger, this Order establishes a more stringent upper pH limitation of 8.0.
- c. **Settleable Solids.** Order No. 5-00-173 contains technology-based effluent limitations for settleable solids. Settleable solids are typical indicators of treatment plant performance and maintenance. Thus, the effluent limitations for settleable solids have been carried over as technology-based effluent limitations in this Order. A monthly average effluent limitation of 0.1 ml/L and a daily maximum of 0.2 ml/L have been established in this Order.
- d. **Flow.** The Facility is designed to provide a tertiary level of treatment for up to a design flow of 0.71 mgd. Therefore, this Order contains an average dry weather flow effluent limit of 0.71 mgd.

### Summary of Technology-based Effluent Limitations Discharge Point No. 001

**Table F-3. Summary of Technology-based Effluent Limitations**

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Average Dry Weather Flow	mgd	--	--	0.71 ADWF	--	--
Biochemical Oxygen Demand (BOD <sub>5</sub> ) (5-day @ 20 Deg. C) <sup>(1)</sup>	mg/L	10	15	30	--	--
	lbs/day <sup>(2)</sup>	60	90	180	--	--
Settleable Solids	ml/L	0.1	--	0.2	--	--
Total Suspended Solids <sup>(1)</sup>	mg/L	10	15	30	--	--
	lbs/day <sup>(2)</sup>	60	90	180	--	--



Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
pH	standard units	--	--	--	6.0	8.0

<sup>(1)</sup> In addition to concentration-based limitations and mass-based limitations for BOD and TSS, the Discharger is required to meet an 85 percent removal discharge specification.

<sup>(2)</sup> Mass-based effluent limitations are established using the following formula:

Mass (lbs/day) = flow rate (mgd) x 8.34 x effluent limitation (mg/L)

where: Mass = mass limitation for a pollutant (lbs/day)

Effluent limitation = concentration limit for a pollutant (mg/L)

Flow rate = average dry weather flow (0.71 mgd)

## C. Water Quality-Based Effluent Limitations (WQBELs)

### 1. Scope and Authority

As specified in section 122.44(d)(1)(i), permits are required to include WQBELs for pollutants (including toxicity) that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an in-stream excursion above any state water quality standard. The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other state plans and policies, or any applicable water quality criteria contained in the CTR and NTR.

### 2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

- a. **Receiving Water.** The receiving stream is Jackson Creek, a tributary to the Mokelumne River within the Delta, via Amador Lake and Dry Creek. The beneficial uses of the Sacramento San Joaquin Delta are described above in Section III.C.1 of this Fact Sheet.
- b. **Discharge Conditions.** This Order includes a compliance schedule of 5 years, after which, the Discharger shall be prohibited from discharging to Jackson Creek when a 20:1 dilution of the effluent in the receiving water for all discharges to Jackson Creek is not available. This prohibition has been established for protection of downstream domestic beneficial water supply uses in accordance with DPH site-specific guidance for this facility's discharge and impacts on existing downstream water user. In the interim period, the Discharger is permitted to discharge Title 22-quality effluent to the receiving water regardless of flow ratio. Current flow data indicate that, at times, Jackson Creek is dominated by effluent water downstream of the discharge. The criteria for constituents such as metals and ammonia that are dependent on pH, temperature, and hardness under this year-round discharge condition were calculated using effluent data. At the end of the compliance schedule, when the Discharger is prohibited from discharging to Jackson Creek at less than 20:1 dilution of the effluent, mixing of the effluent with the receiving water will occur and downstream receiving water will not be dominated by the effluent. Under this condition, the most protective criteria for pH, temperature, and hardness

dependent constituents are calculated using downstream receiving water data. Although the Discharger will be prohibited from discharging when 20:1 dilution is not available, due to the uncertainty of upstream assimilative capacity and sufficient flow data as described in Section IV.C.2.d. below, no dilution credits will be granted for the calculation of effluent limitations.

- c. **Hardness.** While no effluent limitation for hardness is necessary in this Order, hardness is critical to the assessment of the need for, and the development of, effluent limitations for certain metals. The *California Toxics Rule*, at (c)(4), states the following:

*“Application of metals criteria. (i) For purposes of calculating freshwater aquatic life criteria for metals from the equations in paragraph (b)(2) of this section, for waters with a hardness of 400 mg/L or less as calcium carbonate, the actual ambient hardness of the surface water shall be used in those equations.”*

The State Water Board, in footnote 19 to Water Quality Order No. 2004-0013, stated: *“We note that...the Regional Water Board...applied a variable hardness value whereby effluent limitations will vary depending on the actual, current hardness values in the receiving water. We recommend that the Regional Water Board establish either fixed or seasonal effluent limitations for metals, as provided in the SIP, rather than ‘floating’ effluent limitations.”*

Effluent limitations for the discharge must be set to protect the beneficial uses of the receiving water for all discharge conditions. In the absence of the option of including condition-dependent, “floating” effluent limitations that are reflective of actual conditions at the time of discharge, effluent limitations must be set using a reasonable worst-case condition in order to protect beneficial uses for all discharge conditions. This Order establishes a compliance schedule of 5 years for the Discharger, after which the Discharger is prohibited from discharging to Jackson Creek when 20:1 dilution within the receiving water for all discharges to Jackson Creek is not available. For the period until the Discharger is prohibited to discharge unless 20:1 dilution for Facility effluent is available, WQBELs were calculated assuming that, at times, the receiving water is dominated by the effluent. Therefore, for purposes of establishing WQBELs until the Discharger is prohibited from discharging to Jackson Creek without 20:1 dilution, the lowest reported hardness value in the effluent (44 mg/L as CaCO<sub>3</sub>) was used for the calculation of all hardness-dependent metals.

Recent studies provided by several consultants indicate that using the lowest receiving water hardness for establishing hardness-dependent metal WQBELs is not always the most protective for the receiving water. The Regional Water Board has evaluated these studies and concurs that for some parameters the beneficial uses of the receiving water are best protected using the lowest hardness value of the effluent, while for some parameters the use of both the highest hardness value of the receiving water and the lowest hardness value of the effluent is the most protective. Subsequent to achieving 20:1 dilution and in accordance with these studies, the lowest effluent hardness value of 44 mg/L as CaCO<sub>3</sub> was used

for purposes of establishing WQBELs for copper and zinc. For establishing silver WQBELs, the lowest hardness of the effluent (44 mg/L as CaCO<sub>3</sub>) and the highest recorded hardness of the receiving water (118 mg/L as CaCO<sub>3</sub>) were used.

- d. **Assimilative Capacity/Mixing Zone.** Section 1.4.2 of the SIP establishes procedures for granting mixing zones and the assimilative capacity of the receiving water. Before establishing a dilution credit for a discharge, it must first be determined if, and how much (if any), receiving water is available to dilute the discharge. In determining the appropriate available receiving water flow for dilution and assimilative capacity, the Regional Water Board must use the appropriate critical receiving water flow. The SIP requires that the 1Q10 critical low flow be used for calculating dilution ratios for aquatic life criteria and objectives and the 7Q10 critical low flow be used for calculating dilution ratios for chronic aquatic life criteria and objectives. The SIP defines the 1Q10 as the lowest flow that occurs for 1 day with a statistical frequency of once every 10 years, and the 7Q10 as the average low flow that occurs for 7 consecutive days with a statistical frequency of once every 10 years. In order to calculate the appropriate critical receiving water flow, a minimum of 10 years of receiving water flow data must be available. Sufficient flow data for the receiving water was not available to calculate critical low flows and ensure the protection of aquatic life. The Discharger did submit data from the Department of Water Resources for runoff in the Sacramento Valley and San Joaquin Valley indicating the years of 2001 and 2002 were dry years. In addition to this data, stream flow data from 2002 through the present is available. However runoff data and the available stream flow data does not provide the necessary data needed to calculate an accurate 7Q10 and 1Q10 critical low values. Thus, consistent with the assumptions used for Order No. 5-00-173, the worst-case dilution is assumed to be zero to provide protection for the receiving water beneficial uses. The impact of assuming zero assimilative capacity within the receiving water is that discharge limitations are applied end-of-pipe with no allowance for dilution within the receiving water.

The Discharger is currently conducting flow monitoring of the receiving water upstream of the discharge location. This permit may be reopened, and/or this data may be used in future permits, for the calculation of dilution credits and a mixing zone for the facility, provided that the Discharger submits a mixing zone study that provides sufficient information/data to determine compliance with the mixing zone requirements contained in Section 1.4.2.2 of the SIP, or an equivalent study as approved by the Regional Water Board. Further proposed reduced base flows due to the continuing repair and piping of the upstream Amador water canal must be considered in this evaluation.

### 3. Determining the Need for WQBELs

- a. CWA section 301 (b)(1) requires NPDES permits to include effluent limitations that achieve technology-based standards and any more stringent limitations necessary to meet water quality standards. Water quality standards include

- Regional Water Board Basin Plan beneficial uses and narrative and numeric water quality objectives, State Water Board-adopted standards, and federal standards, including the CTR and NTR. The Basin Plan includes numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, and tastes and odors. The narrative toxicity objective states: *“All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.”* (Basin Plan at III-8.00.) With regards to the narrative chemical constituents objective, the Basin Plan states that waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At minimum, *“...water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs)”* in Title 22 of CCR. The narrative tastes and odors objective states: *“Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.”*
- b. Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. Based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs, the Regional Water Board finds that the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for aluminum; ammonia; residual chlorine; copper; cyanide; diazinon; dichlorobromomethane; 2,6-dinitrotoluene; 1,2-diphenylhydrazine; electrical conductivity; iron; manganese; mercury; nitrate (as NO<sub>3</sub>); pathogens; pH; silver; tetrachloroethene; and zinc. Water quality-based effluent limitations (WQBELs) for these constituents are included in this Order. A summary of the reasonable potential analysis (RPA) is provided in Attachment G, and a detailed discussion of the RPA for each constituent is provided below.
- c. The Regional Water Board conducted the RPA in accordance with Section 1.3 of the SIP. Although the SIP applies directly to the control of CTR priority pollutants, the State Water Board has held that the Regional Water Board may use the SIP as guidance for water quality-based toxics control.<sup>1</sup> The SIP states in the introduction *“The goal of this Policy is to establish a standardized approach for permitting discharges of toxic pollutants to non-ocean surface waters in a manner that promotes statewide consistency.”* Therefore, in this Order the RPA procedures from the SIP were used to evaluate reasonable potential for both CTR and non-CTR constituents.
- d. WQBELs were calculated in accordance with section 1.4 of the SIP, as described in Attachment F, Section IV.C.4.

<sup>1</sup> See, Order WQO 2001-16 (Napa) and Order WQO 2004-0013 (Yuba City).

e. **Aluminum.** USEPA developed National Recommended Ambient Water Quality Criteria for protection of freshwater aquatic life for aluminum. The recommended 4-day average (chronic) and 1-hour average (acute) criteria for aluminum are 87 µg/L and 750 µg/L, respectively, for waters with a pH of 6.5 to 9.0. USEPA recommends that the ambient criteria are protective of the aquatic beneficial uses of receiving waters in lieu of site-specific criteria. The receiving stream has been measured to have a hardness typically between 46 and 118 mg/L as CaCO<sub>3</sub>. This condition is supportive of the applicability of the ambient water quality criteria for aluminum, according to USEPA's development document. **T  
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The maximum effluent concentration (MEC) for aluminum was 110 µg/L, based on four samples collected between 30 January 2002 and 14 November 2002, while the maximum observed upstream receiving water aluminum concentration was 50 µg/L, based on four samples collected between 30 January 2002 and 14 November 2002. The SIP requires WQBELs to be established when the end-of-pipe discharge concentration exceeds water quality criteria and the effluent contains detectable amounts of that pollutant. Therefore, aluminum in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a level necessary to protect aquatic life resulting in a violation of the Basin Plan's narrative toxicity objective. Aluminum was not regulated in the previous Order. **T  
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This Order contains a final Average Monthly Effluent Limitation (AMEL) and a Maximum Daily Effluent Limitation (MDEL) for aluminum of 71.2 µg/L and 142.9 µg/L, respectively, based on USEPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life (see Attachment F, Table F-5 for WQBEL calculations). **R  
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Based on the sample results in the effluent, it appears as if the Discharger may be in immediate non-compliance upon issuance of the permit. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. The Basin Plan for the Sacramento and San Joaquin Rivers includes a provision that authorizes the use of compliance schedules in NPDES permits for water quality objectives adopted after 25 September 1995. The WQBELs for aluminum are based on new interpretation of the narrative standard for protection of receiving water beneficial uses. Therefore, a compliance schedule for compliance with the aluminum effluent limitations is established in the Order. **R**

In its infeasibility report dated 7 August 2007, the Discharger indicates that a water effects ratio (WER) study may be necessary to determine the applicability of the water quality criteria for aluminum. A compliance schedule, beginning with the effective date of this Order and ending on the expiration date of this Order, has been established for the Discharger to re-evaluate the applicability of the aluminum water quality criteria on a site-specific basis for the discharge location, or to implement operational changes or treatment train upgrades to comply with final aluminum effluent limitations contained in the Order. Additionally, to ensure

that timely efforts are made by the Discharger to comply with the aluminum effluent limitations, this Order also requires preparation and implementation of a pollution prevention plan in compliance with CWC section 13263.3.

Using the statistical methods for calculating interim effluent limitations described in Attachment F, Section IV.E, an interim performance-based daily maximum limitation of 342.1 µg/L was calculated.

In USEPA's *Ambient Water Quality Criteria for Aluminum—1988* [EPA 440/5-86-008], USEPA states that “[a]cid-soluble aluminum...is probably the best measurement at the present...”; however, USEPA has not yet approved an acid-soluble test method for aluminum. Replacing the ICP/AES portion of the analytical procedure with ICP/MS would allow lower detection limits to be achieved. Based on USEPA's discussion of aluminum analytical methods, this Order allows the use of the alternate aluminum testing protocol described above to meet monitoring requirements.

- f. **Ammonia.** Untreated domestic wastewater contains ammonia. Nitrification is a biological process that converts ammonia to nitrite and nitrite to nitrate. Denitrification is a process that converts nitrate to nitrite or nitric oxide and then to nitrous oxide or nitrogen gas, which is then released to the atmosphere. The Discharger does not currently use nitrification to remove ammonia from the waste stream. Inadequate or incomplete nitrification may result in the discharge of ammonia to the receiving stream. Ammonia is known to cause toxicity to aquatic organisms in surface waters. Discharges of ammonia would violate the Basin Plan narrative toxicity objective. Applying 40 CFR section 122.44(d)(1)(vi)(B), it is appropriate to use USEPA's Ambient National Water Quality Criteria for the Protection of Freshwater Aquatic Life for ammonia, which was developed to be protective of aquatic organisms.

USEPA's *Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life*, for total ammonia, recommends acute (1-hour average; criteria maximum concentration or CMC) standards based on pH and chronic (30-day average; criteria continuous concentration or CCC) standards based on pH and temperature. USEPA found that as pH increased, both the acute and chronic toxicity of ammonia increased. Salmonids were more sensitive to acute toxicity effects than other species. However, while the acute toxicity of ammonia was not influenced by temperature, it was found that invertebrates and young fish experienced increasing chronic toxicity effects with increasing temperature. Because the receiving water has a beneficial use of cold freshwater habitat and the presence of salmonids and early fish life stages in Jackson Creek is well-documented, the recommended criteria for waters where salmonids and early life stages are present were used.

As discussed previously in Section IV.C.2.b. of this Fact Sheet, final effluent limitations in this Order are calculated under both discharge conditions, when the discharge does and does not receive 20:1 dilution. The maximum permitted effluent pH is 8.0, at the request of the Discharger. In order to protect against the

worst-case short-term exposure of an organism, a pH value of 8.0 was used to derive the acute criterion under both discharge conditions. The resulting acute criterion is 2.14 mg/L (as N).

Because of the possibility for the effluent to dominate the downstream receiving waters, the maximum observed 30-day rolling average temperature and the maximum observed pH of the effluent were used to calculate the 30-day chronic criterion for the period until the Discharger achieves 20:1 dilution for all discharges. The maximum observed 30-day effluent temperature was 75°F (23.9°C), for the rolling 30-day period ending 10 August 2005. The maximum observed effluent pH value was 8.0 on 13 October 2005. Using a pH value of 8.0 and the worst-case temperature value of 75°F (23.9°C) on a rolling 30-day basis, the resulting 30-day CCC is 1.33 mg/L (as N) under the condition that the effluent does not receive 20:1 dilution in the receiving water. Under the condition when all discharges to Jackson Creek receive 20:1 dilution, the maximum observed 30-day rolling average temperature and the maximum observed pH of the downstream receiving water were used to calculate the 30-day chronic criteria. The maximum observed 30-day R-2 temperature was 70.88°F (21.6°C), for the rolling 30-day period ending 10 August 2005. The maximum observed R-2 pH value was 8.2 on 18 March 2004. Using a pH value of 8.2 and the worst-case temperature value of 70.88°F (21.6°C) on a rolling 30-day basis, the resulting 30-day CCC is 1.14 mg/L (as N) under the condition that all discharges receive 20:1 dilution.

The 4-day average concentration is derived in accordance with the USEPA criterion as 2.5 times the 30-day CCC. Based on the 30-day CCC of 1.33 mg/L (as N), the 4-day average concentration that should not be exceeded is 3.33 mg/L (as N) under the condition that all discharges do not receive 20:1 dilution. Based on the 30-day CCC of 1.14 mg/L (as N), the 4-day average concentration that should not be exceed is 2.85 mg/L (as N) under the condition that all discharges receive 20:1 dilution.

The MEC for ammonia was 16 mg/L, based on 365 samples collected between 1 January 2003 and 31 July 2006. Therefore, ammonia in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a level necessary to protect aquatic life resulting in a violation of the Basin Plan's narrative toxicity objective.

The Regional Water Board calculates WQBELs in accordance with SIP procedures for non-CTR constituents, and ammonia is a non-CTR constituent. The SIP procedure assumes a 4-day averaging period for calculating the long-term average discharge condition (LTA). However, USEPA recommends modifying the procedure for calculating permit limits for ammonia using a 30-day averaging period for the calculation of the LTA corresponding to the 30-day chronic criteria. Therefore, while the LTAs corresponding to the acute and 4-day chronic criteria were calculated according to SIP procedures, the LTA corresponding to the 30-day chronic criteria was calculated assuming a 30-day averaging period. The lowest LTA representing the acute, 4-day average, and

30-day chronic criteria is then selected for deriving the AMEL and the MDEL. The remainder of the WQBEL calculation for ammonia was performed according to the SIP procedures.

This Order contains a final AMEL and MDEL for ammonia of 1.2 mg/L and 4.2 mg/L, respectively, based on USEPA's *National Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life* under the condition that all discharges do not receive 20:1 dilution (see Attachment F, Table F-6 for WQBEL calculations). This Order contains a final AMEL and MDEL for ammonia of 1.0 and 3.7 mg/L, respectively, under the condition that all discharges receive 20:1 dilution (see Attachment F, Table F-7 for WQBEL calculations).

Based on the sample results in the effluent, it appears that the Discharger may be in immediate non-compliance upon issuance of the permit. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. The Basin Plan for the Sacramento and San Joaquin River Basins includes a provision that authorizes the use of compliance schedules in NPDES permits for water quality objectives adopted after 25 September 1995 (see Basin Plan at page IV-16). The WQBELs for ammonia are based on a new interpretation of the narrative standard for protection of receiving water beneficial uses. Therefore, a compliance schedule for compliance with the ammonia effluent limitations is established in the Order.

This Order requires the Discharger to meet compliance schedules for various CTR pollutants by 17 May 2010, based on the requirements contained in Section 2.1 of the SIP. In order to comply with the effluent limitations for these various pollutants, the Discharger is expected to make necessary changes in facility operations or the treatment train. During these upgrades or changes of operation, the Discharger is expected to evaluate, plan, and implement treatment options that would result in full compliance with all final effluent limitations contained within the Order. Thus, the Discharger is expected to comply with final effluent limitations for ammonia in the same timeframe granted for CTR parameters. The final "floating" ammonia limitations from the previous Order were established as interim limits in this Order. The interim limitations are in effect through 17 May 2010. As part of the compliance schedule, this Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final ammonia effluent limitations. In addition, the Discharger shall submit an engineering treatment feasibility study and prepare and implement a pollution prevention plan that is in compliance with CWC section 13263.3(d)(3).

- g. **Chlorine Residual.** The USEPA developed National Recommended Ambient Water Quality Criteria for protection of freshwater aquatic life for chlorine. The recommended water quality criteria for total residual chlorine are 0.011 mg/L (4-day average, CCC) and 0.019 mg/L (1-hour average, CMC). The MEC for effluent data submitted by the Discharger from 1 January 2003 through 31 July 2006 is 0.4 mg/L. The SIP requires WQBELs to be established when the



end-of-pipe discharge concentration exceeds water quality criteria and the effluent contains detectable amounts of that pollutant. Therefore, chlorine residual in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a level necessary to protect aquatic life resulting in a violation of the Basin Plan's narrative toxicity objective.

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The USEPA *Technical Support Document for Water Quality-Based Toxics Control* [EPA/505/2-90-001] contains statistical methods for converting chronic (4-day) and acute (1-hour) aquatic life criteria to average monthly and maximum daily effluent limitations based on the variability of the existing data and the expected frequency of monitoring. However, because chlorine is an acutely toxic constituent that can and will be monitored continuously, an average 1-hour limitation is considered more appropriate than an average daily limitation. Thus, WQBELs for residual chlorine are equal to the direct application of the average 1-hour average (0.019 mg/L) and 4-day average (0.011 mg/L) water quality criteria for chlorine residual.

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Effluent limitations for residual chlorine were included in Order No. 5-00-171 for the final discharge to the receiving water. The existing permit contained rounded effluent limitations for residual chlorine as a 1-hour average of 0.02 mg/L and a weekly average of 0.01 mg/L. Effluent limitations for residual chlorine in this Order will not be rounded and will be the direct application of the water quality criteria. Because the treatment system dechlorinates the final effluent prior to discharge, the Discharger should be able to immediately comply with these new effluent limitations for chlorine residual.

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The chlorine residual limitations required in this Order are protective of aquatic organisms in the undiluted discharge, anticipating no residual chlorine impacts to benthic organisms.

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- h. **Copper.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for copper. The criteria for copper are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. The USEPA default conversion factors for copper in freshwater are 0.96 for both the acute and the chronic criteria. Using the worst-case measured hardness from the effluent (44 mg/L as CaCO<sub>3</sub>) and the USEPA recommended dissolved-to-total translator, the applicable chronic criterion (maximum 4-day average concentration) is 4.63 µg/L and the applicable acute criterion (maximum 1-hour average concentration) is 6.46 µg/L, as total recoverable.

The MEC for total copper was 12 µg/L, based on four samples collected between 30 January 2002 and 14 November 2002, while the maximum observed upstream receiving water total copper concentration was 1.2 µg/L, based on four samples collected between 30 January 2002 and 14 November 2002. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for copper. An AMEL and MDEL for total copper of 3.22 µg/L and 6.46 µg/L, respectively, are included in this Order based

on CTR criteria for the protection of freshwater aquatic life (see Attachment F, Table F-8 for WQBEL calculations). These effluent limitations are applicable under both discharge conditions discussed in Section IV.C.2.c. of this Fact Sheet.

Based on reported discharge data, the Discharger is unable to comply with these limitations. Section 2.1 of the SIP allows for compliance schedules within the permit for existing discharges where it is demonstrated that it is infeasible for a Discharger to achieve immediate compliance with a CTR criterion. Using the statistical methods for calculating interim effluent limitations described in Attachment F, Section IV.E, an interim performance-based maximum daily limitation of 37.3 µg/L was calculated.

Section 2.1 of the SIP provides that: *“Based on an existing discharger’s request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit.”* Section 2.1, further states that compliance schedules may be included in NPDES permits provided that the following justification has been submitted: *...“(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable.”* The Discharger provided this information on **7 August 2007**. The new WQBELs for copper become effective on **18 May 2010**.

This Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final copper effluent limitations. The interim effluent limitations are in effect through **17 May 2010**. As part of the compliance schedule for copper, the Discharger shall develop a pollution prevention program in compliance with CWC section 13263.3(d)(3).

- i. **Cyanide.** The CTR includes maximum 1-hour average and 4-day average cyanide criteria of 22 µg/L and 5.2 µg/L, respectively, for the protection of freshwater aquatic life. The MEC for cyanide was 6 µg/L, based on four samples collected between 30 January 2002 and 14 November 2002, while the maximum observed upstream receiving water cyanide concentration was a detected but not quantifiable monitoring result of 1.9 µg/L, based on four samples collected between 30 January 2002 and 14 November 2002. The discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for cyanide. An AMEL and MDEL for cyanide of 4.26 µg/L and 8.54 µg/L, respectively, are included in this Order based on CTR criteria for the protection of freshwater aquatic life (see Attachment F, Table F-9 for WQBEL calculations).

Based on reported discharge data, the Discharger is unable to comply with these limitations. Section 2.1 of the SIP allows for compliance schedules within the permit for existing discharges where it is demonstrated that it is infeasible for a Discharger to achieve immediate compliance with a CTR criterion. Using the statistical methods for calculating interim effluent limitations described in Attachment F, Section IV.E, an interim performance-based maximum daily limitation of 18.66 µg/L was calculated.

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Section 2.1 of the SIP provides that: *“Based on an existing discharger’s request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit.”* Section 2.1, further states that compliance schedules may be included in NPDES permits provided that the following justification has been submitted: *...“(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable.”* The Discharger provided this information on **7 August 2007**. The new WQBELs for cyanide become effective on **18 May 2010**.

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This Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final cyanide effluent limitations. The interim effluent limitations are in effect through **17 May 2010**. As part of the compliance schedule for cyanide, the Discharger shall develop and implement a pollution prevention program in compliance with CWC section 13263.3(d)(3).

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- j. **Diazinon.** The Basin Plan requires the Regional Water Board to consider relevant numerical criteria and guidelines developed by other agencies in determining compliance with the narrative toxicity objective (Basin Plan, IV-17.00). In March 2000, the California Department of Fish and Game (DFG) established acute and chronic criteria for diazinon to protect fresh water aquatic life. The acute (1-hour average) and chronic (4-day average) criteria are 0.08 µg/L and 0.05 µg/L, respectively.

The MEC for diazinon was 0.38 µg/L, based on four samples collected between 30 January 2002 and 14 November 2002. The maximum observed up stream receiving water for diazinon was <0.1 µg/L, based on four samples collected between 30 January 2002 and 14 November 2002. The discharge has a reasonable potential to cause or contribute to an in-stream excursion above a level necessary to protect aquatic life resulting in a violation of the Basin Plan’s narrative toxicity objective for diazinon. An AMEL and MDEL for diazinon of 0.04 µg/L and 0.08 µg/L, respectively, are included in this Order based on DFG’s diazinon criteria for the protection of freshwater aquatic life (see Attachment F,

Table F-10 for WQBEL calculations).

Based on the reported sample results in the effluent, it appears as if the Discharger may be in immediate non-compliance upon issuance of the permit. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. The Basin Plan for the Sacramento and San Joaquin Rivers includes a provision that authorizes the use of compliance schedules in NPDES permits for water quality objectives adopted after 25 September 1995. The WQBELs for diazinon are based on new interpretation of the narrative standard for protection of receiving water beneficial uses. Therefore, a compliance schedule for compliance with the diazinon effluent limitations is established in the Order. To ensure that timely efforts are made by the Discharger to comply with the diazinon effluent limitations, this Order also requires preparation and implementation of a pollution prevention plan in compliance with CWC section 13263.3.

Using the statistical methods for calculating interim effluent limitations described in Attachment F, Section IV.E, an interim performance-based maximum daily limitation of 1.18 µg/L was calculated.

- k. **Dichlorobromomethane.** The CTR includes a dichlorobromomethane criterion of 0.56 µg/L for the protection of human health and is based on a one-in-a-million cancer risk for waters from which both water and organisms are consumed. The MEC for dichlorobromomethane was 1.5 µg/L, based on four samples collected between 30 January 2002 and 14 November 2002, while the maximum observed upstream receiving water dichlorobromomethane concentration was non-detect, based on four samples collected between 30 January 2002 and 14 November 2002. The discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for dichlorobromomethane. An AMEL and MDEL for dichlorobromomethane of 0.56 µg/L and 1.12 µg/L, respectively, are included in this Order based on the CTR criterion for the protection of human health (see Attachment F, Table F-11 for WQBEL calculations). The Discharger is unable to immediately comply with these limitations. Section 2.1 of the SIP allows for compliance schedules within the permit for existing discharges where it is demonstrated that it is infeasible for a Discharger to achieve immediate compliance with a CTR criterion. Using the statistical methods for calculating interim effluent limitations described in Attachment F, Section IV.E, an interim performance-based maximum daily limitation of 4.67 µg/L was calculated.

Section 2.1 of the SIP provides that: *“Based on an existing discharger’s request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit.”* Section 2.1, further states that compliance schedules may be included in NPDES permits provided that the following justification has been submitted: *...“(a) documentation that diligent efforts have been made to quantify pollutant*

*levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable.”* The Discharger provided this information on **7 August 2007**. The new WQBELs for dichlorobromomethane become effective on **18 May 2010**.

This Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final dichlorobromomethane effluent limitations. The interim effluent limitations are in effect through **17 May 2010**. As part of the compliance schedule for dichlorobromomethane, the Discharger shall develop and implement a pollution prevention program in compliance with CWC section 13263.3(d)(3).

- I. **2,6-Dinitrotoluene.** The USEPA integrated Risk information system (IRIS) and USEPA suggested no-adverse-response level (SNARL) for one in a million incremental cancer risk estimates for drinking water for 2,6-dinitrotoluene is 0.05 µg/L. The MEC for 2,6-Dinitrotoluene was 1.1 µg/L, based on four samples collected between 30 January 2002 and 14 November 2002, while the maximum observed upstream receiving water 2,6-dinitrotoluene concentration was non-detect, based on four samples collected between 30 January 2002 and 14 November 2002. The discharge has a reasonable potential to cause or contribute to an in-stream excursion above the IRIS and SNARL water quality criteria for 2,6-dinitrotoluene. An AMEL for 2,6-dinitrotoluene of 0.05 µg/L and a MDEL of 0.1 µg/L are included in this Order based on the USEPA IRIS and SNARL water quality criteria (see Attachment F, Table F-12 for WQBEL calculations).

Based on the sample results in the effluent, it appears as if the Discharger may be in immediate non-compliance upon issuance of the permit. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. The Basin Plan for the Sacramento and San Joaquin Rivers includes a provision that authorizes the use of compliance schedules in NPDES permits for water quality objectives adopted after 25 September 1995. The WQBELs for 2,6-dinitrotoluene are based on new interpretation of the narrative standard for protection of receiving water beneficial uses. Therefore, a compliance schedule for compliance with the 2,6-Dinitrotoluene effluent limitations is established in the Order. To ensure that timely efforts are made by the Discharger to comply with the 2,6-dinitrotoluene effluent limitations, this Order also requires preparation and implementation of a pollution prevention plan in compliance with CWC section 13263.3.

Using the statistical methods for calculating interim effluent limitations described in Attachment F, Section IV.E, an interim performance-based daily maximum limitation of 3.42 µg/L was calculated.

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- m. **1,2-Diphenylhydrazine.** The CTR includes a 1,2-diphenylhydrazine criterion of 0.04 µg/L for the protection of human health and is based on a one-in-a-million cancer risk for waters from which both water and organisms are consumed. The MEC for 1,2-diphenylhydrazine was 0.2 µg/L, based on four samples collected between 30 January 2002 and 14 November 2002, while the maximum observed upstream receiving water 1,2-diphenylhydrazine concentration was non-detect, based on four samples collected between 30 January 2002 and 14 November 2002. The discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for 1,2-diphenylhydrazine.

An AMEL and MDEL for 1,2-diphenylhydrazine of 0.04 µg/L and 0.08 µg/L, respectively, are included in this Order based on the CTR criterion for the protection of human health (see Attachment F, Table F-13 for WQBEL calculations). The Discharger is unable to immediately comply with these limitations. Section 2.1 of the SIP allows for compliance schedules within the permit for existing discharges where it is demonstrated that it is infeasible for a Discharger to achieve immediate compliance with a CTR criterion. Using the statistical methods for calculating interim effluent limitations described in Attachment F, Section IV.E, an interim performance-based maximum daily limitation of 0.62 µg/L was calculated.

Section 2.1 of the SIP provides that: *“Based on an existing discharger’s request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit.”* Section 2.1, further states that compliance schedules may be included in NPDES permits provided that the following justification has been submitted: *...“(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable.”* The Discharger provided this information on **7 August 2007**. The new WQBELs for 1,2-diphenylhydrazine become effective on **18 May 2010**.

This Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final 1,2-diphenylhydrazine effluent limitations. The interim effluent limitations are in effect through **17 May 2010**. As part of the compliance schedule for 1,2-diphenylhydrazine, the Discharger shall develop and implement a pollution prevention program in compliance with CWC section 13263.3(d)(3).

- n. **Iron.** The Basin Plan water quality objectives for chemical constituents requires that water designated for use as domestic or municipal supply (MUN) shall not

contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) specified in Title 22 of the California Code of Regulations. The Secondary MCL - Consumer Acceptance Limit for iron is 300 µg/L. Based on input from DPH and the fact that secondary MCLs are designed to protect consumer acceptance, effluent limitations based on secondary MCLs are applied as an annual average concentration.

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The MEC for iron was 60 µg/L, based on four samples collected between 30 January 2002 and 14 November 2002, while the maximum observed upstream receiving water iron concentration was 360 µg/L, based on four samples collected between 30 January 2002 and 14 November 2002. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Secondary MCL for iron. The receiving water has exceeded the Secondary MCL for iron. Therefore, no assimilative capacity is available in the receiving water for iron. An annual average effluent limitation of 300 µg/L for iron is included in this Order based on protection of the Basin Plan's narrative chemical constituents objective. Based on the sample results for the effluent, it appears the Discharger can meet this new limitation.

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- o. **Manganese.** The Basin Plan water quality objectives for chemical constituents requires that water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) specified in Title 22 of the California Code of Regulations. The Secondary MCL - Consumer Acceptance Limit for manganese is 50 µg/L. Based on input from DPH and the fact that secondary MCLs are designed to protect consumer acceptance, effluent limitations based on secondary MCLs are applied as an annual average concentration.

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The MEC for manganese was reported as 50 µg/L, based on four samples collected between 30 January 2002 and 14 November 2002, while the maximum upstream receiving water manganese concentration was 50 µg/L, based on four samples collected between 30 January 2002 and 14 November 2002. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Secondary MCL for manganese. The receiving water has exceeded the Secondary MCL for manganese. Therefore, no assimilative capacity is available in the receiving water for manganese. An annual average effluent limitation of 50 µg/L for manganese is included in this Order based on protection of the Basin Plan's narrative chemical constituents objective. Based on the fact that only one sample result in the effluent was detected, and that it was detected at a level equal to the criterion, it appears the Discharger can meet this new limitation.

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- p. **Mercury.** The current USEPA Ambient Water Quality Criteria for Protection of Freshwater Aquatic Life, continuous concentration, for mercury is 0.77 µg/L (30-day average, chronic criteria). The CTR contains a human health criterion (based on a one-in-a-million cancer risk) of 0.050 µg/L for waters from which both water and aquatic organisms are consumed. Both values are controversial and subject to change. In 40 CFR Part 131, USEPA acknowledges that the human

health criteria may not be protective of some aquatic or endangered species and that “...*more stringent mercury limits may be determined and implemented through use of the State’s narrative criterion.*” In the CTR, USEPA reserved the mercury criteria for freshwater and aquatic life and may adopt new criteria at a later date.

The maximum observed effluent mercury concentration was 0.0091 µg/L. Mercury bioaccumulates in fish tissue and, therefore, discharge of mercury to the receiving water may contribute to exceedances of the narrative toxicity objective and have impacts on beneficial uses in the Sacramento San Joaquin Delta. Thus, the discharge of mercury to the surface waters in the Central Valley draining into the Delta is being limited.

This Order contains a performance-based mass effluent limitation of 0.0016 lbs/month for mercury for the effluent discharged to the receiving water. This limitation is based on maintaining the mercury loading at the current level until a total maximum daily load (TMDL) can be established and USEPA develops mercury standards that are protective of human health. The mass limitation was derived using the maximum observed effluent mercury concentration and the design average daily flow rate of the current treatment plant (0.71 mgd):

Effluent concentration (mg/L) \* Design average daily flow rate \* 8.34 (conversion factor) \* [365 days / 12 months] = Pounds per month

If USEPA develops new water quality standards for mercury, this permit may be reopened and the effluent limitations adjusted.

- q. **Nitrate (as NO<sub>3</sub>).** Untreated domestic wastewater contains ammonia. Nitrification is a biological process that converts ammonia to nitrite and nitrite to nitrate. Denitrification is a process that converts nitrate to nitrite or nitric oxide and then to nitrous oxide or nitrogen gas, which is then released to the atmosphere. Nitrate and nitrite are known to cause adverse health effects in humans. DPH has adopted Primary MCLs at Title 22 of the California Code of Regulations (CCR), Table 64431-A, for the protection of human health for nitrate (as NO<sub>3</sub>) of 45 mg/L.

Inadequate or incomplete denitrification may result in the discharge of nitrate to the receiving stream. The conversion of ammonia to nitrites and the conversion of nitrites to nitrates present a reasonable potential for the discharge to cause or contribute to an in-stream excursion above the Primary MCL for nitrate. Further, the MEC for nitrate (as NO<sub>3</sub>) for 181 sampling events from 1 January 2003 through 31 July 2006 is 56 mg/L, which exceeds the California Primary MCL. An AMEL for nitrate of 45 mg/L is included in this Order based on the MCL. This effluent limitation is included in this Order to assure the treatment process adequately nitrifies and denitrifies the waste stream to protect the beneficial use of municipal and domestic supply.

Based on the effluent sample results, the MEC has exceeded the water quality objective for nitrate (as NO<sub>3</sub>). Because the AMEL for nitrate (as NO<sub>3</sub>) contained



in the previous Order is the same WQBEL contained in the new Order, a compliance time schedule is not granted and the Discharger must continue to achieve compliance with the final effluent limitation for nitrate.

- r. **Pathogens.** The beneficial uses of the receiving water include municipal and domestic supply and water contact recreation, and there is less than 20:1 dilution of the Facility effluent provided by Jackson Creek. To protect these beneficial uses, the Regional Water Board finds that the wastewater must be disinfected and adequately treated to prevent disease. The principal infectious agents (pathogens) that may be present in raw sewage may be classified into three broad groups: bacteria, parasites, and viruses. Tertiary treatment, consisting of chemical coagulation, sedimentation, and filtration, has been found to remove approximately 99.5% of viruses. Filtration is an effective means of reducing viruses and parasites from the waste stream. The wastewater must be treated to tertiary standards (filtered), or equivalent, to protect contact recreational uses.

DPH has developed reclamation criteria, CCR, Division 4, Chapter 3 (Title 22), for the reuse of wastewater. Title 22 requires that for spray irrigation of food crops, parks, playgrounds, schoolyards, and other areas of similar public access, wastewater be adequately disinfected, oxidized, coagulated, clarified, and filtered, and that the effluent total coliform levels not exceed 2.2 MPN/100 ml as a 7-day median. As coliform organisms are living and mobile, it is impracticable to quantify an exact number of coliform organisms and to establish weekly average limitations. Instead, coliform organisms are measured as a most probable number and regulated based on a 7-day median limitation. The previous Order established an effluent limitation of 23 MPN/100 ml as a maximum daily. This effluent limitation will be replaced with an effluent limitation of 23 MPN/100 ml that can not be exceeded more than once in any 30-day period to be consistent with Title 22 requirements.

Title 22 also requires that recycled water used as a source of water supply for non-restricted recreational impoundments be disinfected tertiary recycled water that has been subjected to conventional treatment. A non-restricted recreational impoundment is defined as “...an impoundment of recycled water, in which no limitations are imposed on body-contact water recreational activities.” Title 22 is not directly applicable to surface waters; however, the Regional Water Board finds that it is appropriate to apply an equivalent level of treatment to that required by DPH’s reclamation criteria because the receiving water is used for contact recreation purposes. The stringent disinfection criteria of Title 22 are appropriate since the undiluted effluent may be used for the irrigation of food crops and/or for body-contact water recreation. To protect human health, DPH recommends that discharges to receiving streams with contact recreation beneficial uses, and less than 20:1 receiving water to effluent dilution ratio be tertiary treated, or equivalent.

Coliform organisms are intended as an indicator of the effectiveness of the entire treatment train and the effectiveness of removing other pathogens. The method of treatment is not prescribed by this Order; however, wastewater must be

treated to a level equivalent to that recommended by DPH. In addition to coliform testing, a turbidity effluent limitation has been included as a second indicator of the effectiveness of the treatment process and to assure compliance with the required level of treatment. The previous Order included effluent limitations of 2 NTU as a monthly average and 5 NTU as a daily maximum. However, a tertiary treatment process, or equivalent, must be capable of reliably meeting a turbidity limitation of 2 nephelometric turbidity units (NTU) as a daily average, 5 NTU no more than 5% of the time in a 24-hour period, and 10 NTU at any time. This Order includes the more stringent effluent limitations for turbidity to ensure compliance with Title 22 requirements. Failure of the filtration system such that virus removal is impaired would normally result in increased particles in the effluent, which result in higher effluent turbidity. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure and rapid corrective action. Coliform testing, by comparison, is not conducted continuously and requires several hours, to days, to identify high coliform concentrations. Therefore, to ensure compliance with the DPH recommended Title 22 disinfection criteria, weekly average effluent limitations are impracticable for turbidity.

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This Order contains effluent limitations and a Title 22 tertiary level of treatment, or equivalent, necessary to protect the beneficial uses of the receiving water. In accordance with CWC section 13241, the Regional Water Board has considered the following:

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- i. The past, present and probable future beneficial uses of the receiving stream include municipal and domestic supply, agricultural supply for irrigation and stockwatering, industrial process supply and service supply, contact water recreation, other non-contact water recreation, warm freshwater aquatic habitat, cold freshwater aquatic habitat, warm and cold fish migration habitat, warm spawning habitat, wildlife habitat, and navigation.
- ii. The environmental characteristics of the hydrographic unit, including the quality of the available water, will be improved by the requirement to provide tertiary treatment for this wastewater discharge. Tertiary treatment will allow for the reuse of the undiluted wastewater for food crop irrigation and contact recreation activities that would otherwise be unsafe according to recommendations from the DPH.
- iii. Fishable and swimmable water quality conditions can be reasonably achieved through the coordinated control of all factors that affect water quality in the area.
- iv. The economic impact of requiring an increased level of treatment has been considered. Tertiary treatment facilities capable of meeting Title 22, or equivalent, requirements are currently installed and operating at the facility. Additional costs for operation and maintenance are not expected to have a detrimental economic impact on the Discharger or the people of the State. The loss of beneficial uses within downstream waters without the Title 22

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tertiary treatment requirement (which may include prohibiting Creek water to be used for existing downstream residents' domestic water supply, irrigation of food crops and prohibiting public access for contact recreational purposes) would have a detrimental economic impact. In addition to pathogen removal to protect water supply, irrigation and recreation uses, tertiary treatment may also aid in meeting discharge limitations for other pollutants, such as heavy metals, reducing the need for advanced treatment specific for those pollutants.

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- v. The requirement to provide Title 22 tertiary treatment, or equivalent, for this discharge will not adversely impact the need for housing in the area. The potential for developing housing in the area will be facilitated by improved water quality, which protects the contact recreation and irrigation uses of the receiving water. DPH recommends that, in order to protect the public health, relatively undiluted wastewater effluent must be treated to a Title 22 tertiary level for drinking water, contact recreational and food crop irrigation uses.
- vi. It is the Regional Water Board's policy, (Basin Plan, page IV-12.00, Policy 2) to encourage the reuse of wastewater. The Regional Water Board requires dischargers to evaluate how reuse or land disposal of wastewater can be optimized. The need to develop and use recycled water is facilitated by providing a tertiary level of wastewater treatment that will allow for a greater variety of uses in accordance with CCR, Title 22.
- vii. The Regional Water Board has considered the factors specified in CWC section 13263, including considering the provisions in CWC section 13241, in adopting the disinfection and filtration requirements under Title 22 criteria. The Regional Water Board finds, on balance, that these requirements are necessary to protect the beneficial uses of Jackson Creek and the Delta waterways.
- s. **pH.** The Basin Plan includes a water quality objective for surface waters (except for Goose Lake) that the "...pH shall not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated COLD or WARM beneficial uses." Effluent limitations for pH are included in this Order based on the Basin Plan objectives for pH.
- t. **Salinity.** The discharge contains total dissolved solids (TDS), chloride, sulfate, and electrical conductivity (EC). These are water quality parameters that are indicative of the salinity of the water. Their presence in water can be growth limiting to certain agricultural crops and can affect the taste of water for human consumption. There are no USEPA water quality criteria for the protection of aquatic organisms for these constituents. The Basin Plan contains a chemical constituent objective that incorporates State MCLs, contains a narrative objective, and contains numeric water quality objectives for EC, TDS, sulfate, and chloride.

**Table F-4. Salinity Water Parameters**

Parameter	Agricultural WQ Goal <sup>(1)</sup>	Secondary MCL <sup>3</sup>	Effluent	
			Average	Maximum
EC (µmhos/cm)	varies <sup>(2)</sup>	900, 1600, 2200	406	547
TDS (mg/L)	varies <sup>(2)</sup>	500, 1000, 1500	266	332
Sulfate (mg/L)	N/A	250, 500, 600	44	52
Chloride (mg/L)	varies <sup>(2)</sup>	250, 500, 600	44	46

<sup>(1)</sup> Agricultural water quality goals based on *Water Quality for Agriculture*, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985)

<sup>(2)</sup> The EC level in irrigation water that harms crop production depends on the crop type, soil type, irrigation methods, rainfall, and other factors. An EC level of 700 umhos/cm is generally considered to present no risk of salinity impacts to crops. However, many crops are grown successfully with higher salinities.

<sup>(3)</sup> The secondary MCLs are stated as a recommended level, upper level, and a short-term maximum level.

- i. **Chloride.** The agricultural water quality goal for chloride is 106 mg/L. The secondary MCL for chloride is 250 mg/L, as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum. Chloride concentrations in the effluent ranged from 43 mg/L to 46 mg/L, with an average of 44 mg/L, for four samples collected by the Discharger from 30 January 2002 through 14 November 2002. Background concentrations in Jackson Creek ranged from 2.4 mg/L to 6.5 mg/L, with an average of 4.8 mg/L, for four samples collected by the Discharger from 30 January 2002 through 14 November 2002.
- ii. **Electrical Conductivity (EC).** The agricultural water quality goal for EC is 700 µmhos/cm. The secondary MCL for EC is 900 µmhos/cm as a recommended level, 1600 µmhos/cm as an upper level, and 2200 µmhos/cm as a short-term maximum. A review of the Discharger's monitoring data from 30 January 2002 through 31 July 2006 shows an average effluent EC of 406 µmhos/cm, with a range from 286 µmhos/cm to 547 µmhos/cm for 367 samples. The background receiving water EC averaged 191 µmhos/cm in 369 sampling events collected by the Discharger from 30 January 2002 through 31 July 2006.
- iii. **Sulfate.** The secondary MCL for sulfate is 250 mg/L as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum. Sulfate concentrations in the effluent ranged from 38 mg/L to 52 mg/L, with an average of 44 mg/L, for four samples collected by the Discharger from 30 January 2002 through 14 November 2002. Background concentrations in Jackson Creek ranged from 7.6 mg/L to 32 mg/L, with an average of 19.7 mg/L, for four samples collected by the Discharger from 30 January 2002 through 14 November 2002.
- iv. **Total Dissolved Solids (TDS).** The agricultural water quality goal for TDS is 450 mg/L. The secondary MCL for TDS is 500 mg/L as a recommended level, 1000 mg/L as an upper level, and 1500 mg/L as a short-term maximum. The average TDS effluent concentration was 266 mg/L and ranged from 220 mg/L to 332 mg/L for 18 samples collected by the Discharger from

30 January 2002 through 31 July 2006. These concentrations do not exceed the applicable water quality objectives. The background receiving water TDS ranged from 70 mg/L to 152 mg/L, with an average of 126 mg/L in four sampling events performed by the Discharger from 30 January 2002 through 14 November 2002.

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- v. **Salinity Effluent Limitations.** Increasing salinity levels throughout the Central Valley Region demonstrate an increasing potential to exceed water quality objectives and negatively affect beneficial uses. The Regional Water Board, with cooperation of the State Water Board, has begun the process to develop a new policy for the regulation of salinity in the Central Valley. In a statement issued at the 16 March 2006, Regional Water Board meeting, board member Dr. Karl Longley recommended that the Board continue to exercise its authority to regulate discharges of salt to minimize salinity increases within the Central Valley. Dr. Longley stated, *“The process of developing new salinity control policies does not, therefore, mean that we should stop regulating salt discharges until a salinity Policy is developed. In the meantime, the Board should consider all possible interim approaches to continue controlling and regulating salts in a reasonable manner, and encourage all stakeholder groups that may be affected by the Regional Board’s policy to actively participate in policy development.”*

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Based on the relatively low reported salinity, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion of water quality objectives for salinity. However, since the Discharger discharges to Jackson Creek, a tributary of the Mokelumne River and eventually the Sacramento-San Joaquin River Delta, of additional concern is the salt contribution to Delta waters. Allowing the Discharger to increase its current salt loading may be contrary to the Region-wide effort to address salinity in the Central Valley. Therefore, this Order includes a performance-based effluent limitation of 426 µmhos/cm for EC to be applied as an annual average to limit the discharge to current levels. This interim performance-based effluent limitation represents the maximum annual average effluent EC concentration for a calendar year using data from January 2001 through December 2005. The maximum annual average of 426 µmhos/cm occurred during the year 2004. Based on the sample results for the effluent, it appears the Discharger can meet these new limitations.

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In order to ensure that the Discharger will continue to control the discharge of salinity, this Order includes a requirement to develop and implement a salinity evaluation and minimization plan. Also water supply monitoring is required to evaluate the relative contribution of salinity from the source water to the effluent.

- u. **Silver.** The CTR includes a hardness-dependent criterion for the protection of freshwater aquatic life for silver. The criterion for silver is presented in a dissolved concentration. USEPA recommends a conversion factor to translate the dissolved concentration to total concentration. The USEPA default

conversion factor for silver in freshwater is 0.85 for the acute criterion. As discussed previously in Section IV.C.1.b., the worst-case measured hardness from the effluent (44 mg/L as  $\text{CaCO}_3$ ) was used to calculate the applicable acute criterion (maximum 1-hour average concentration) of 0.99  $\mu\text{g/L}$  for the period until the Discharger can attain 20:1 dilution within the receiving water. The lowest hardness of the effluent (44 mg/L as  $\text{CaCO}_3$ ) and the highest recorded hardness of the receiving water (118 mg/L as  $\text{CaCO}_3$ ) were used to calculate the applicable acute criterion of 5.39  $\mu\text{g/L}$  for the period subsequent to achieving 20:1 dilution.

The MEC for silver was 1.2  $\mu\text{g/L}$ , based on four samples collected between 30 January 2002 and 14 November 2002, while the maximum observed upstream receiving water silver concentration was non-detect ( $<0.02 \mu\text{g/L}$ ), based on four samples collected between 30 January 2002 and 14 November 2002. The discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for silver for the period until the Discharger attains 20:1 dilution. An AMEL and MDEL for silver of 0.49  $\mu\text{g/L}$  and 0.99  $\mu\text{g/L}$ , respectively, are included in this Order based on CTR criteria for the protection of freshwater aquatic life (see Attachment F, Table F-15 for WQBEL calculations). Although silver does not demonstrate reasonable potential when the discharge receives 20:1, these effluent limitations are established in this Order under both discharge conditions in order to prevent backsliding.

Based on reported discharge data, the Discharger is unable to comply with these limitations. Section 2.1 of the SIP allows for compliance schedules within the permit for existing discharges where it is demonstrated that it is infeasible for a Discharger to achieve immediate compliance with a CTR criterion. Using the statistical methods for calculating interim effluent limitations described in Attachment F, Section IV.E, an interim performance-based maximum daily limitation of 3.73  $\mu\text{g/L}$  was calculated.

Section 2.1 of the SIP provides that: *“Based on an existing discharger’s request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit.”* Section 2.1, further states that compliance schedules may be included in NPDES permits provided that the following justification has been submitted: *...“(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable.”* The Discharger provided this information on **7 August 2007**. The new WQBELs for silver become effective on **18 May 2010**.

This Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final silver effluent limitations. The interim effluent limitations are in effect through **17 May 2010**. As part of the compliance schedule for silver, the Discharger shall develop and implement a pollution prevention program in compliance with CWC section 13263.3(d)(3).

- v. **2,3,7,8-TCDD and Congeners.** The CTR includes a criterion for 2,3,7,8-TCDD of 0.013 pg/L for the protection of human health based on consumption of water and organisms and 0.014 pg/L for ingestion of organisms only. The CTR does not include criteria for other dioxin congeners and there are no formally promulgated numeric water quality criteria for the other dioxin congeners. Therefore, determination of reasonable potential and effluent limitations, when appropriate, would be based on an interpretation of the Basin Plan narrative toxicity standard.

Dioxins occur as a large number of different isomers (congeners). In addition to 2,3,7,8-TCDD, there are many congeners of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) that exhibit toxic effects similar to those of 2,3,7,8-TCDD. Since human exposure to dioxins occurs as a complex mixture of these congeners, a methodology referred to as the Toxic Equivalency Factor (TEF) was developed to assess the health risks posed by mixtures of these compounds. The TEF methodology is a relative potency scheme that ranks the dioxin-like toxicity of a particular congener relative to 2,3,7,8-TCDD, which is the most potent congener. The TEF scheme used for inland surface waters, enclosed bays, and estuaries of California is provided in Section 3 of the SIP.

The SIP is the statewide, adopted Policy that Regional Water Boards must follow for implementing the CTR. In regards to 2,3,7,8-TCDD and its congeners the SIP reads:

*“Whether or not an effluent limitation is required for 2,3,7,8-TCDD in accordance with Section 1.3 of the Policy, each RWQCB shall require (as described below) major and minor POTW and industrial dischargers in its region to conduct effluent monitoring for the 2,3,7,8-TCDD congeners listed above. The purpose of the monitoring is to assess the presence and amounts of the congeners being discharged to inland surface waters, enclosed bays, and estuaries for the development of a strategy to control these chemicals in a future multi-media approach.”*

To date, the multi-media control strategy referenced in the SIP has not been developed. The introduction to the SIP states, in part, that the Policy establishes monitoring requirements for 2,3,7,8-TCDD equivalents. The SIP does not explicitly direct the Regional Water Boards to establish effluent limits when dioxin congeners are detected in the effluent. Rather it directs the discharger to report the data and in its report to multiply each measured or estimated congener

concentration by its respective TEF value (described above) and report the sum of these values to the Regional Water Board. The SIP further states:

*“Based on the monitoring results, the RWQCB may, at its discretion, increase the monitoring requirement (e.g., increase sampling frequency) to further investigate frequent or significant detections of any congener. At the conclusion of the three-year monitoring period, the SWRCB and RWQCBs will assess the data (a total of six samples each from major POTWs and industrial dischargers, and a total of two samples each from minor POTWs and industrial dischargers), and determine whether further monitoring is necessary.”*

2,3,7,8-TCDD was not detected in any of the samples collected in the Facility effluent or in the receiving water in four sampling events from 30 January 2002 to 14 November 2002. Monitoring of the dioxin and furan congeners in the Facility effluent and receiving water was performed by the Discharger on three occasions between 30 January 2002 and 14 November 2002. In the effluent, two of the congeners (OCDD and OCDF) were reported as detected, however, of the four detected values, three were estimated values (i.e., j-flagged). In the receiving water, two congeners (1,2,3,4,6,7,8-HpCDD and OCDD) were reported as detected, however, all three of the detected values were estimated values (i.e., j-flagged).

Based on the limited data available, the lack of formally promulgated water quality criteria for congeners other than 2,3,7,8-TCDD, the fact that Jackson Creek is not listed as impaired for dioxins and furans, and because the multi-media control strategy discussed in the SIP has not been developed, it is not appropriate to establish effluent limitations for other dioxin congeners at this time.

Due to the concerns of the potential impacts of dioxins and furans on the receiving water and in compliance with the SIP, this Order requires annual effluent monitoring for dioxin and congeners. This Order includes a reopener to allow the Regional Water Board to consider adding effluent limits for dioxin congeners based on results of additional effluent monitoring, if the State Water Board develops the multi-media control strategy discussed in the SIP, or if the State Water Board provides other direction. This Order also requires the Discharger to identify the sources of detected dioxin congeners in its influent and to implement measures to evaluate and reduce those detected dioxin congeners in its discharge to the receiving water. Special Provision, Section VI.C.3.c. of this Order, requires the Discharger to prepare a 2,3,7,8-TCDD congeners source evaluation and minimization plan. Implementation measures to reduce detectable amounts of congeners may include source control and other effective means. Compliance with these requirements should result in the reduction of detectable amounts of dioxin congeners in the effluent discharged.

- w. **Tetrachloroethene.** The CTR includes a criterion for tetrachloroethene of 0.8 µg/L for the protection of human health for waters from which both water and organisms are consumed. The MEC for tetrachloroethene was 1.5 µg/L, based on four samples collected between 30 January 2002 and 14 November 2002,



while the maximum observed upstream receiving water tetrachloroethene concentration was non-detect (<0.44 µg/L), based on four samples collected between 30 January 2002 and 14 November 2002. The discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for tetrachloroethene.

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An AMEL and MDEL for tetrachloroethene of 0.8 µg/L and 1.6 µg/L, respectively, are included in this Order based on the CTR criterion for the protection of human health (see Attachment F, Table F-16 for WQBEL calculations). The Discharger is unable to immediately comply with these limitations. Section 2.1 of the SIP allows for compliance schedules within the permit for existing discharges where it is demonstrated that it is infeasible for a Discharger to achieve immediate compliance with a CTR criterion. Using the statistical methods for calculating interim effluent limitations described in Attachment F, Section IV.E, an interim performance-based maximum daily limitation of 4.67 µg/L was calculated.

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Section 2.1 of the SIP provides that: *“Based on an existing discharger’s request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit.”* Section 2.1, further states that compliance schedules may be included in NPDES permits provided that the following justification has been submitted: *...“(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable.”* The Discharger provided this information on **7 August 2007**. The new WQBELs for tetrachloroethene become effective on **18 May 2010**.

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This Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final tetrachloroethene effluent limitations. The interim effluent limitations are in effect through **17 May 2010**. As part of the compliance schedule for tetrachloroethene, the Discharger shall develop and implement a pollution prevention program in compliance with CWC section 13263.3(d)(3).

- x. **Toxicity.** See Section IV.C.5. of the Fact Sheet regarding whole effluent toxicity.
- y. **Zinc.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for zinc. The criteria for zinc are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. The conversion factors for zinc in freshwater are 0.978 for the acute criteria and 0.986 for the chronic criteria. Using the worst-case ambient (lowest upstream receiving water) measured hardness from the effluent (44 mg/L), the applicable chronic criterion (maximum

4-day average concentration) and the applicable acute criterion (maximum 1-hour average concentration) are both 59.76 µg/L, as total recoverable. The MEC for zinc was 100 µg/L, based on four samples collected between 30 January 2002 and 14 November 2002, while the maximum observed upstream receiving water zinc concentration was 3 µg/L, based on four samples collected between 30 January 2002 and 14 November 2002. The discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for zinc.

An AMEL and MDEL for zinc of 30 µg/L and 60 µg/L, respectively, are included in this Order based on the CTR criterion for the protection of aquatic life (see Attachment F, Table F-17 for WQBEL calculations). These effluent limitations are applicable under both discharge conditions discussed in Section IV.C.1.b. of this Fact Sheet. The Discharger is unable to immediately comply with these limitations. Section 2.1 of the SIP allows for compliance schedules within the permit for existing discharges where it is demonstrated that it is infeasible for a Discharger to achieve immediate compliance with a CTR criterion. Using the statistical methods for calculating interim effluent limitations described in Attachment F, Section IV.E, an interim performance-based maximum daily limitation of 311 µg/L was calculated.

Section 2.1 of the SIP provides that: *“Based on an existing discharger’s request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit.”* Section 2.1, further states that compliance schedules may be included in NPDES permits provided that the following justification has been submitted: *...“(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable.”* The Discharger provided this information on **7 August 2007**. The new WQBELs for zinc become effective on **18 May 2010**.

This Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final zinc effluent limitations. The interim effluent limitations are in effect through **17 May 2010**. As part of the compliance schedule for zinc, the Discharger shall develop and implement a pollution prevention program in compliance with CWC section 13263.3(d)(3).

#### 4. WQBEL Calculations

- a. As discussed in Section IV.C.3 above, effluent limitations for chlorine residual, iron, manganese, pathogens, and pH were based on Basin Plan objectives and applied directly as effluent limitations.

b. Effluent limitations for aluminum; ammonia; copper; cyanide; diazinon; dichlorobromomethane; 2,6-dinitrotoluene; 1,2-diphenylhydrazine; silver; tetrachloroethene; and zinc were calculated in accordance with section 1.4 of the SIP. The following paragraphs describe the methodology used for calculating effluent limitations.

c. **Effluent Limitation Calculations.** For each water quality criterion/objective, the effluent concentration (ECA) was calculated using the following steady-state mass balance equation:

$$\begin{aligned} ECA &= C + D(C - B) && \text{where } C > B, \text{ and} \\ ECA &= C && \text{where } C \leq B, \end{aligned}$$

where:

- ECA = effluent concentration allowance
- D = dilution credit
- C = the priority pollutant criterion/objective
- B = the ambient background concentration.

According to the SIP, the ambient background concentration (B) in the equation above shall be the observed maximum with the exception that an ECA calculated from a priority pollutant criterion/objective that is intended to protect human health from carcinogenic effects shall use the ambient background concentration as an arithmetic mean. For ECAs based on MCLs implementing the Basin Plan chemical constituents objective that are applied as annual averages, an arithmetic mean was also used for B due to the long-term basis of the criterion.

Acute and chronic toxicity ECAs were then converted to equivalent long-term averages (LTA) using statistical multipliers and the lowest is used. Additional statistical multipliers were then used to calculate the maximum daily effluent limitation (MDEL) and the average monthly effluent limitation (AMEL).

Human health ECAs are set equal to the AMEL and a statistical multiplier is used to calculate the MDEL.

$$\begin{aligned} AMEL &= mult_{AMEL} \left[ \min \left( M_A ECA_{acute}, M_C ECA_{chronic} \right) \right] \\ MDEL &= mult_{MDEL} \left[ \min \left( M_A ECA_{acute}, M_C ECA_{chronic} \right) \right] \\ MDEL_{HH} &= \left( \frac{mult_{MDEL}}{mult_{AMEL}} \right) AMEL_{HH} \end{aligned}$$

LTA<sub>acute</sub>

LTA<sub>chronic</sub>

- where:
- mult<sub>AMEL</sub> = statistical multiplier converting minimum LTA to AMEL
  - mult<sub>MDEL</sub> = statistical multiplier converting minimum LTA to MDEL
  - M<sub>A</sub> = statistical multiplier converting CMC to LTA
  - M<sub>C</sub> = statistical multiplier converting CCC to LTA

WQBELs were calculated for aluminum; ammonia; copper; cyanide; diazinon; dichlorobromomethane; 1,2-diphenylhydrazine; 2,6-dinitrotoluene; tetrachloroethene; and zinc as described in Tables F-5 through F-17, below.

**Table F-5. WQBEL Calculations for Aluminum  
(under both discharge conditions)**

	Acute	Chronic	Human Health
Criteria (µg/L)	750 <sup>(1)</sup>	87 <sup>(1)</sup>	200 <sup>(2)</sup>
Dilution Credit	No Dilution	No Dilution	No Dilution
ECA	750	87	200
ECA Multiplier	0.321	0.527	--
LTA	348	45.9	--
AMEL Multiplier (95 <sup>th</sup> %)	<sup>(3)</sup>	1.55	--
<b>AMEL (µg/L)</b>	<sup>(3)</sup>	<b>71.24</b>	200 <sup>(3)</sup>
MDEL Multiplier (99 <sup>th</sup> %)	<sup>(3)</sup>	3.11	--
MDEL/AMEL Multiplier	--	--	2.01
<b>MDEL (µg/L)</b>	<sup>(3)</sup>	<b>142.9</b>	401.2 <sup>(3)</sup>

<sup>(1)</sup> USEPA National Recommended Ambient Water Quality Standard

<sup>(2)</sup> CA Department of Health Secondary MCL

<sup>(3)</sup> Limitations based on chronic LTA (Chronic LTA < Acute LTA)

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**Table F-6. WQBEL Calculations for Ammonia  
(until all discharges receive 20:1 dilution)**

	Acute	Chronic (4-day)	Chronic (30-day)	Human Health
pH	8.0 <sup>(1)</sup>	N/A	8.0 <sup>(2)</sup>	N/A
Temperature °C	N/A	N/A	23.9 <sup>(3)</sup>	N/A
Criteria (mg/L) <sup>(4)</sup>	5.62	3.33	1.33	1.5
Dilution Credit	No Dilution	No Dilution	No Dilution	No Dilution
ECA	5.62	3.33	1.33	1.5
ECA Multiplier	0.21	0.39	0.68	--
LTA	1.18	1.3	0.9	--
AMEL Multiplier (95 <sup>th</sup> %)	(5)	(6)	1.31	--
<b>AMEL (mg/L)</b>	(5)	(6)	<b>1.2</b>	<b>1.5</b>
MDEL Multiplier (99 <sup>th</sup> %)	(5)	(6)	4.68	2.01
<b>MDEL (mg/L)</b>	(5)	(6)	<b>4.2</b>	<b>3.0</b>

(1) Maximum permitted effluent pH

(2) Maximum reported effluent pH

(3) Maximum reported 30-day rolling average effluent temperature

(4) USEPA National Recommended Ambient Water Quality Standard

(5) Limitations based on  $LTA_{\text{chronic (30-day)}} (LTA_{\text{chronic (30-day)}} < LTA_{\text{acute}})$

(6) Limitations based on  $LTA_{\text{chronic (30-day)}} (LTA_{\text{chronic (30-day)}} < LTA_{\text{chronic (4-day)}})$

**Table F-7. WQBEL Calculations for Ammonia  
(when all discharges receive 20:1 dilution)**

	Acute	Chronic (4-day)	Chronic (30-day)	Human Health
pH	8.0 <sup>(1)</sup>	N/A	8.2 <sup>(2)</sup>	N/A
Temperature °C	N/A	N/A	21.6 <sup>(3)</sup>	N/A
Criteria (mg/L) <sup>(4)</sup>	5.62	2.85	1.14	1.5
Dilution Credit	No Dilution	No Dilution	No Dilution	No Dilution
ECA	5.62	2.85	1.14	1.5
ECA Multiplier	0.21	0.39	0.68	--
LTA	1.18	1.11	0.78	--
AMEL Multiplier (95 <sup>th</sup> %)	(5)	(6)	1.31	--
<b>AMEL (mg/L)</b>	(5)	(6)	<b>1.0</b>	<b>1.5</b>
MDEL Multiplier (99 <sup>th</sup> %)	(5)	(6)	4.68	--
MDEL/AMEL Multiplier	--	--	--	2.01
<b>MDEL (mg/L)</b>	(5)	(6)	<b>3.7</b>	<b>3.0</b>

(1) Maximum permitted effluent pH

(2) Maximum reported effluent pH

(3) Maximum reported 30-day rolling average effluent temperature

(4) USEPA National Recommended Ambient Water Quality Standard

(5) Limitations based on  $LTA_{\text{chronic (30-day)}} (LTA_{\text{chronic (30-day)}} < LTA_{\text{acute}})$

(6) Limitations based on  $LTA_{\text{chronic (30-day)}} (LTA_{\text{chronic (30-day)}} < LTA_{\text{chronic (4-day)}})$

**Table F-8. WQBEL Calculations for Copper  
(under both discharge conditions)**

	Acute	Chronic	Human Health
Criteria (µg/L)	6.46 <sup>(1)</sup>	4.63 <sup>(1)</sup>	1,300 <sup>(2)</sup>
Dilution Credit	No Dilution	No Dilution	No Dilution
ECA	6.46	4.63	1,300
ECA Multiplier	0.32	0.53	--
LTA	2.07	2.44	--
AMEL Multiplier (95 <sup>th</sup> %)	1.55	<sup>(3)</sup>	--
<b>AMEL (µg/L)</b>	<b>3.22</b>	<sup>(3)</sup>	<b>1,300<sup>(3)</sup></b>
MDEL Multiplier (99 <sup>th</sup> %)	3.11	<sup>(3)</sup>	--
MDEL/AMEL Multiplier	--	--	2.01
<b>MDEL (µg/L)</b>	<b>6.46</b>	<sup>(3)</sup>	<b>2608<sup>(3)</sup></b>

<sup>(1)</sup> USEPA CTR Criteria calculated using the lowest reported effluent hardness value of 44 mg/L

<sup>(2)</sup> CA Department of Health Primary MCL

<sup>(3)</sup> Limitations based on acute LTA (Acute LTA < Chronic LTA)

**Table F-9. WQBEL Calculations for Cyanide  
(under both discharge conditions)**

	Acute	Chronic	Human Health
Criteria (µg/L)	22 <sup>(1)</sup>	5.2 <sup>(1)</sup>	700 <sup>(2)</sup>
Dilution Credit	No Dilution	No Dilution	No Dilution
ECA	22	5.2	700
ECA Multiplier	0.321	0.527	--
LTA	7.06	2.74	--
AMEL Multiplier (95 <sup>th</sup> %)	<sup>(3)</sup>	1.55	--
<b>AMEL (µg/L)</b>	<sup>(3)</sup>	<b>4.26</b>	<b>700<sup>(3)</sup></b>
MDEL Multiplier (99 <sup>th</sup> %)	<sup>(3)</sup>	3.11	--
MDEL/AMEL Multiplier	--	--	2.01
<b>MDEL (µg/L)</b>	<sup>(3)</sup>	<b>8.54</b>	<b>1,404<sup>(3)</sup></b>

<sup>(1)</sup> USEPA CTR Criteria

<sup>(2)</sup> USEPA CTR Criteria for sources of drinking water

<sup>(3)</sup> Limitations based on chronic LTA (Chronic LTA < Acute LTA)

**Table F-10. WQBEL Calculations for Diazinon  
(under both discharge conditions)**

	Acute	Chronic
Criteria (µg/L)	0.08 <sup>(1)</sup>	0.05 <sup>(1)</sup>
Dilution Credit	No Dilution	No Dilution
ECA	0.08	0.05
ECA Multiplier	0.321	0.527
LTA	0.0256	0.0263
AMEL Multiplier (95 <sup>th</sup> %)	1.55	<sup>(2)</sup>
<b>AMEL (µg/L) <sup>(1)</sup></b>	<b>0.04</b>	<sup>(2)</sup>
MDEL Multiplier (99 <sup>th</sup> %)	3.11	<sup>(2)</sup>
<b>MDEL (µg/L)</b>	<b>0.08</b>	<sup>(2)</sup>

<sup>(1)</sup> CA Department of Fish and Game Water Quality Criteria

<sup>(2)</sup> Limitations based on acute LTA (Acute LTA < Chronic LTA)

**Table F-11. WQBEL Calculations for Dichlorobromomethane  
(under both discharge conditions)**

	Human Health
Criteria (µg/L)	0.56 <sup>(1)</sup>
Dilution Credit	No Dilution
ECA	0.56
<b>AMEL (µg/L)</b>	<b>0.56</b>
MDEL/AMEL Multiplier	2.01
<b>MDEL (µg/L)</b>	<b>1.12</b>

<sup>(1)</sup> USEPA CTR Criteria for sources of drinking water

**Table F-12. WQBEL Calculations for 2,6-Dinitrotoluene  
(under both discharge conditions)**

	Acute	Chronic	Human Health
Criteria (µg/L)	330 <sup>(1)</sup>	230 <sup>(1)</sup>	0.05 <sup>(2)</sup>
Dilution Credit	No Dilution	No Dilution	No Dilution
ECA	330	230	0.05
ECA Multiplier	0.321	0.527	--
LTA	105.96	121.31	--
AMEL Multiplier (95 <sup>th</sup> %)	1.55	<sup>(3)</sup>	--
<b>AMEL (µg/L)</b>	<b>164.49<sup>(4)</sup></b>	<sup>(3)</sup>	<b>0.05</b>
MDEL Multiplier (99 <sup>th</sup> %)	3.11	<sup>(3)</sup>	--
MDEL/AMEL Multiplier	--	--	2.01
<b>MDEL (µg/L)</b>	<b>330.00<sup>(4)</sup></b>	<sup>(3)</sup>	<b>0.10</b>

<sup>(1)</sup> USEPA National Recommended Ambient Water Quality Standard

<sup>(2)</sup> USEPA Drinking Water Health Advisory

<sup>(3)</sup> Aquatic life limitations based on acute LTA (Acute LTA < Chronic LTA)

<sup>(4)</sup> Final WQBEL based on human health

**Table F-13. WQBEL Calculations for 1,2-Diphenylhydrazine  
(under both discharge conditions)**

	Human Health
Criteria (µg/L)	0.04 <sup>(1)</sup>
Dilution Credit	No Dilution
ECA	0.04
<b>AMEL (µg/L)</b>	<b>0.04</b>
MDEL/AMEL Multiplier	2.01
<b>MDEL (µg/L)</b>	<b>0.08</b>

<sup>(1)</sup> USEPA CTR Criteria for sources of drinking water

**Table F-14. WQBEL Calculations for Nitrate (under both discharge conditions)**

	Human Health
Criteria (mg/L)	45 <sup>(1)</sup>
Dilution Credit	No Dilution
ECA	45
<b>AMEL (mg/L)</b>	<b>45</b>

<sup>(1)</sup> California Department of Health Primary MCL

**Table F-15. WQBEL Calculations for Silver (until all discharges receive 20:1 dilution)**

	Acute	Human Health
Criteria (µg/L)	0.99 <sup>(1)</sup>	100 <sup>(2)</sup>
Dilution Credit	No Dilution	No Dilution
ECA	0.99	100
ECA Multiplier	0.32	--
LTA	0.32	--
AMEL Multiplier (95 <sup>th</sup> %)	1.55	--
<b>AMEL (µg/L)</b>	<b>0.49</b>	<b>100<sup>(3)</sup></b>
MDEL Multiplier (99 <sup>th</sup> %)	3.11	--
MDEL/AMEL Multiplier	--	--
<b>MDEL (µg/L)</b>	<b>0.99</b>	<b>--</b>

<sup>(1)</sup> USEPA CTR Criteria calculated using the lowest reported effluent hardness value of 44 mg/L

<sup>(2)</sup> CA Department of Health Primary MCL

<sup>(3)</sup> Final WQBEL based on CTR Criteria.

**Table F-16. WQBEL Calculations for Tetrachloroethene  
(under both discharge conditions)**

	Human Health
Criteria (µg/L)	0.8 <sup>(1)</sup>
Dilution Credit	No Dilution
ECA	0.8
<b>AMEL (µg/L)</b>	<b>0.8</b>
MDEL/AMEL Multiplier	2.01
<b>MDEL (µg/L)</b>	<b>1.6</b>

<sup>(1)</sup> CTR Criteria for sources of drinking water



**Table F-17. WQBEL Calculations for Zinc (under both discharge conditions)**

	Acute	Chronic	Human Health
Criteria (µg/L)	59.76 <sup>(1)</sup>	59.76 <sup>(1)</sup>	5,000
Dilution Credit	No Dilution	No Dilution	No Dilution
ECA	59.76	59.76	5,000
ECA Multiplier	0.32	0.53	--
LTA	19.19	31.52	--
AMEL Multiplier (95 <sup>th</sup> %)	1.55	<sup>(3)</sup>	--
<b>AMEL (µg/L)</b>	<b>30</b>	<sup>(3)</sup>	<b>5,000<sup>(3)</sup></b>
MDEL Multiplier (99 <sup>th</sup> %)	3.11	<sup>(3)</sup>	--
MDEL/AMEL Multiplier	--	--	2.01
<b>MDEL (µg/L)</b>	<b>60</b>	<sup>(3)</sup>	<b>10,030<sup>(3)</sup></b>

<sup>(1)</sup> USEPA CTR Criteria calculated using the lowest reported effluent hardness value of 44 mg/L

<sup>(2)</sup> CA Department of Health Primary MCL

<sup>(3)</sup> Aquatic life limitations based on acute LTA (Acute LTA < Chronic LTA)

### Summary of Water Quality-based Effluent Limitations Discharge Point No. 001

**Table F-18. Summary of Water Quality-based Effluent Limitations  
(until all discharges receive 20:1 dilution)**

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Aluminum, Total Recoverable	µg/L	71.2	--	142.9	--	--
Ammonia, Total (as N)	mg/L	1.2	--	4.2	--	--
Copper, Total Recoverable	µg/L	3.22	--	6.46	--	--
Cyanide, Total	µg/L	4.26	--	8.54	--	--
Diazinon	µg/L	0.04	--	0.08	--	--
Dichlorobromomethane	µg/L	0.56	--	1.12	--	--
2,6-Dinitrotoluene	µg/L	0.05	--	--	--	--
1,2-Diphenylhydrazine	µg/L	0.04	--	0.08	--	--
Electrical Conductivity	µmhos/cm	426 <sup>(1)</sup>	--	--	--	--
Iron, Total Recoverable	µg/L	300 <sup>(1)</sup>	--	--	--	--
Manganese, Total Recoverable	µg/L	50 <sup>(1)</sup>	--	--	--	--
Mercury, Total Recoverable	lbs/month	0.0016 <sup>(2)</sup>	--	--	--	--
Nitrate (as NO <sub>3</sub> )	mg/L	45	--	--	--	--
pH	s.u.	--	--	--	6.5	8.5
Silver, Total Recoverable	µg/L	0.49	--	0.99	--	--
Tetrachloroethene	µg/L	0.8	--	1.6	--	--
Total Coliform	MPN/100 mL	23 <sup>(3)</sup>	2.2 <sup>(4)</sup>	--	--	240
Turbidity	NTU	--	--	2 <sup>(5)</sup>	--	10
Residual Chlorine	µg/L	--	11 <sup>(6)</sup>	19 <sup>(7)</sup>	--	--

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Zinc, Total Recoverable	µg/L	30	--	60	--	--

- (1) Expressed as an annual average.  
 (2) Expressed as a total monthly mass load.  
 (3) Not to be exceeded more than once in any 30-day period.  
 (4) Expressed as a 7-day median.  
 (5) Turbidity not to exceed 2 NTU as a daily average and 5 NTU more than 5% of the time in a 24-hour period.  
 (6) Expressed as a 4-day average.  
 (7) Expressed as a 1-hour average.

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**Table F-19. Summary of Water Quality-based Effluent Limitations  
(when all discharges receive 20:1 dilution)**

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Aluminum, Total Recoverable	µg/L	71.2	--	142.9	--	--
Ammonia, Total (as N)	mg/L	1.0	--	3.7	--	--
Copper, Total Recoverable	µg/L	3.22	--	6.46	--	--
Cyanide, Total	µg/L	4.26	--	8.54	--	--
Diazinon	µg/L	0.04	--	0.08	--	--
Dichlorobromomethane	µg/L	0.56	--	1.12	--	--
2,6-Dinitrotoluene	µg/L	0.05	--	--	--	--
1,2-Diphenylhydrazine	µg/L	0.04	--	0.08	--	--
Electrical Conductivity	µmhos/cm	426 <sup>(1)</sup>	--	--	--	--
Iron, Total Recoverable	µg/L	300 <sup>(1)</sup>	--	--	--	--
Manganese, Total Recoverable	µg/L	50 <sup>(1)</sup>	--	--	--	--
Mercury, Total Recoverable	lbs/month	0.0016 <sup>(2)</sup>	--	--	--	--
Nitrate (as NO <sub>3</sub> )	mg/L	45	--	--	--	--
pH	s.u.	--	--	--	6.5	8.5
Silver, Total Recoverable	µg/L	0.49	--	0.99	--	--
Tetrachloroethene	µg/L	0.8	--	1.6	--	--
Total Coliform	MPN/100 mL	23 <sup>(3)</sup>	2.2 <sup>(4)</sup>	--	--	240
Turbidity	NTU	--	--	2 <sup>(5)</sup>	--	10
Residual Chlorine	µg/L	--	11 <sup>(6)</sup>	19 <sup>(7)</sup>	--	--
Zinc, Total Recoverable	µg/L	30	--	60	--	--

- (1) Expressed as an annual average.  
 (2) Expressed as a total monthly mass load.  
 (3) Not to be exceeded more than once in any 30-day period.  
 (4) Expressed as a 7-day median.  
 (5) Turbidity not to exceed 2 NTU as a daily average and 5 NTU more than 5% of the time in a 24-hour period.  
 (6) Expressed as a 4-day average.  
 (7) Expressed as a 1-hour average.

## 5. Whole Effluent Toxicity (WET)

For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct whole effluent toxicity testing for acute and chronic toxicity, as specified in the Monitoring and Reporting Program (Attachment E, Section V.). This Order also contains effluent limitations for acute toxicity and requires the Discharger to implement best management practices to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity.

- a. **Acute Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at III-8.00) The Basin Plan also states that, "...effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate...". USEPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "Guidance for NPDES Permit Issuance", dated February 1994. In section B.2. "Toxicity Requirements" (pgs. 14-15) it states that, "*In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUC.*" Accordingly, effluent limitations for acute toxicity have been included in this Order as follows:

**Acute Toxicity.** Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

Minimum for any one bioassay -----	70%
Median for any three or more consecutive bioassays -----	90%

- b. **Chronic Aquatic Toxicity.** Based on semi-annual whole effluent chronic toxicity testing performed by the Discharger from 14 March 2000 through 11 July 2006, the discharge has not demonstrated reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective. Attachment E of this Order requires semi-annual chronic WET monitoring for continued demonstration of compliance with the narrative toxicity objective.

In addition to WET monitoring, Special Provisions VI.C.2.a. requires the Discharger to submit to the Regional Water Board an Initial Investigative TRE Work Plan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. The provision also includes a numeric toxicity monitoring trigger and requirements for accelerated monitoring,

as well as, requirements for TRE initiation if a pattern of toxicity is demonstrated.

## D. Final Effluent Limitations

### 1. Mass-based Effluent Limitations

Title 40 CFR 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 CFR 122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. This Order includes effluent limitations expressed in terms of mass and concentration. In addition, pursuant to the exceptions to mass limitations provided in 40 CFR 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH and temperature, and when the applicable standards are expressed in terms of concentration (e.g., CTR criteria and MCLs) and mass limitations are not necessary to protect the beneficial uses of the receiving water.

Mass-based effluent limitations were calculated based upon the permitted average daily discharge flow allowed in Section IV.A.1.g of the Limitations and Discharge Requirements.

### 2. Averaging Periods for Effluent Limitations

Title 40 CFR 122.45 (d) requires average weekly and average monthly discharge limitations for publicly owned treatment works (POTWs) unless impracticable. However, for toxic pollutants and pollutant parameters in water quality permitting, the USEPA recommends the use of a maximum daily effluent limitation in lieu of average weekly effluent limitations for two reasons. *“First, the basis for the 7-day average for POTWs derives from the secondary treatment requirements. This basis is not related to the need for assuring achievement of water quality standards. Second, a 7-day average, which could comprise up to seven or more daily samples, could average out peak toxic concentrations and therefore the discharge’s potential for causing acute toxic effects would be missed.”* (TSD, pg. 96) This Order utilizes maximum daily effluent limitations in lieu of average weekly effluent limitations for aluminum; ammonia; copper; cyanide; diazinon; dichlorobromomethane; 1,2-diphenylhydrazine; 2,6-dinitrotoluene; tetrachloroethene; and zinc as recommended by the TSD for the achievement of water quality standards and for the protection of the beneficial uses of the receiving stream. As discussed in Attachment F, Section IV.C.3., annual average effluent limitations have been established for iron and manganese in accordance with DPH guidance. An annual average effluent limitation has also been established for electrical conductivity to control the contribution of salinity into receiving waters flowing to the Sacramento – San Joaquin River Delta. Furthermore, for BOD<sub>5</sub>, settleable solids, TSS, pH, coliform, and turbidity, weekly average effluent limitations have been replaced or supplemented with effluent limitations utilizing shorter averaging periods. Chlorine is an acutely toxic constituent that can and will be monitored continuously, an average 1-hour limitation is considered more appropriate than an average daily limitation. Thus, WQBELs for residual chlorine are equal to the direct application of the average 1-hour average and 4-day average water quality criteria for chlorine

residual. The rationale for using shorter averaging periods for these constituents is discussed in Attachment F, Section IV.C.3., above.

### **3. Satisfaction of Anti-Backsliding Requirements**

All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order. Effluent limitations for silver are calculated for the discharge condition when not all discharges have 20:1 dilution conditions. These limitations are applicable also under the 20:1 discharge dilution condition to prevent backsliding.

### **4. Satisfaction of Antidegradation Policy**

This Order is consistent with the antidegradation provisions of 40 CFR §131.12 and State Water Board Resolution No. 68-16. This Order does not allow an increase in regulated flow from the previous WDR Order. This Order contains existing limitations and requirements from the previous Order and requires additional limitations and requirements for additional constituents, including aluminum; copper; cyanide; diazinon; dichlorobromomethane; 2,6-dinitrotoluene; 1,2-diphenylhydrazine; iron; manganese; silver; tetrachloroethene; and zinc. Therefore, with no increase in flow, and a more stringent set of effluent requirements, degradation of the receiving water is not anticipated.

### **5. Final Effluent Limitations**

Final effluent limitations were determined by comparing the technology-based effluent limitations (including the effluent limitations established in Order No. 5-00-173) and the WQBELs and applying the most stringent limitations for each individual parameter. Effluent limitations for aluminum; ammonia; copper; cyanide; diazinon; dichlorobromomethane; 2,6-dinitrotoluene; 1,2-diphenylhydrazine; electrical conductivity; iron; manganese; mercury; nitrate (as NO<sub>3</sub>); pH; silver; tetrachloroethene; total fecal coliform; total residual chlorine; toxicity; and zinc are based on applicable water quality criteria. Effluent limitations for flow, BOD<sub>5</sub>, TSS, settleable solids, and turbidity are technology-based. The effluent limitation established for flow is based on the design flow capacity of the Facility.

The final effluent limitations for the discharge of tertiary treated effluent through Discharge Point No. 001 are summarized below:

## Summary of Final Effluent Limitations Discharge Point No. 001

**Table F-20. Summary of Final Effluent Limitations (when the discharge receives 20:1 dilution for all discharges)**

Parameter	Units	Effluent Limitations					Basis <sup>(1)</sup>
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
CONVENTIONALS							
Biochemical Oxygen Demand (BOD <sub>5</sub> ) (5-day @ 20 Deg. C) <sup>(2)</sup>	mg/L	10	15	30	--	--	CFR
	lbs/day	60	90	180	--	--	
pH	s.u.	--	--	--	6.5	8.0	BP
Total Suspended Solids <sup>(2)</sup>	mg/L	10	15	30	--	--	CFR
	lbs/day	60	90	180	--	--	
INORGANICS							
Copper, Total Recoverable	µg/L	3.22	--	6.46	--	--	CTR
Cyanide, Total	µg/L	4.26	--	8.54	--	--	CTR
Mercury, Total Recoverable	lbs/month	0.0016 <sup>(3)</sup>	--	--	--	--	PERF
Silver, Total Recoverable	µg/L	0.49	--	0.99	--	--	CTR
Zinc, Total Recoverable	µg/L	30	--	60	--	--	CTR
ORGANICS							
Diazinon	µg/L	0.04	--	0.08	--	--	DFG
Dichlorobromomethane	µg/L	0.56	--	1.12	--	--	CTR
2,6-Dinitrotoluene	µg/L	0.05	--	0.1	--	--	DWHA
1,2-Diphenylhydrazine	µg/L	0.04	--	0.08	--	--	CTR
Tetrachloroethene	µg/L	0.8	--	1.6	--	--	CTR
NON-CONVENTIONALS							
Aluminum, Total Recoverable	µg/L	71.23	--	142.91	--	--	NAWQC
Ammonia, Total (as N)	mg/L	1.2	--	4.2	--	--	NAWQC
Electrical Conductivity	µmhos/cm	426 <sup>(4)</sup>	--	--	--	--	PERF
Flow	MGD	--	--	0.71	--	--	DC
Iron, Total Recoverable	µg/L	300 <sup>(4)</sup>	--	--	--	--	SEC MCL
Manganese, Total Recoverable	µg/L	50 <sup>(4)</sup>	--	--	--	--	SEC MCL
Nitrate (as NO <sub>3</sub> )	mg/L	45	--	--	--	--	MCL
Settleable Solids	ml/L	0.1	--	0.2	--	--	PO
Total Coliform	MPN/100 mL	23 <sup>(5)</sup>	2.2 <sup>(6)</sup>	--	--	240	DPH
Turbidity	NTU	--	--	2 <sup>(7)</sup>	--	10	TTC
Residual Chlorine	µg/L	--	11 <sup>(8)</sup>	19 <sup>(9)</sup>	--	--	NAWQC
Acute Toxicity	%survival	--	--	--	--	<sup>(10)</sup>	BP

- (1) CFR – Based on federal regulations contained in 40 CFR Part 133.  
 BP – Based on water quality objectives contained in the Basin Plan.  
 CTR – Based on water quality criteria contained in the California Toxics Rule, and applied as specified in the SIP.  
 DFG – Based on water quality criteria established by the Department of Fish and Game to protect freshwater aquatic life.  
 DWHA – Based on USEPA's Drinking Water Health Advisory.  
 NAWQC – Based on USEPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life.  
 PERF – Based on recent facility performance.  
 DF – Based on the design capacity of the Facility.  
 PO – Based on the previous order (Order No. 5-00-173).  
 SEC MCL – Based on California Secondary Maximum Contaminant Levels.  
 MCL – Based on California Primary Maximum Contaminant Levels.

DPH – Based on California Department of Public Health reclamation criteria for the reuse of wastewater.

TTC – Tertiary treatment capability. These limitations reflect the level of treatment that is capable of a properly operated tertiary treatment facility.

- (2) In addition to concentration-based limitations and mass-based limitations for BOD<sub>5</sub> and TSS, the Discharger is required to meet an 85 percent removal discharge specification.
- (3) Expressed as a total monthly mass load.
- (4) Expressed as an annual average.
- (5) Not to be exceeded more than once in any 30-day period.
- (6) Expressed as a 7-day median.
- (7) Turbidity not to exceed 2 NTU as a daily average or 5 NTU more than 5% of the time within a 24-hour period.
- (8) Applied as a 4-day average.
- (9) Applied as a 1-hour average.
- (10) Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:
  - i. 70%, minimum for any one bioassay; and
  - ii. 90%, median for any three consecutive bioassays.

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**Table F-21. Summary of Final Effluent Limitations  
(until the discharge receives 20:1 dilution for all discharges)****T**

Parameter	Units	Effluent Limitations					Basis <sup>(1)</sup>
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
CONVENTIONALS							
Biochemical Oxygen Demand (BOD <sub>5</sub> ) (5-day @ 20 Deg. C) <sup>(2)</sup>	mg/L	10	15	30	--	--	CFR T
	lbs/day	60	90	180	--	--	
pH	s.u.	--	--	--	6.5	8.0	BP A
Total Suspended Solids <sup>(2)</sup>	mg/L	10	15	30	--	--	CFR T
	lbs/day	60	90	180	--	--	
INORGANICS							
Copper, Total Recoverable	µg/L	3.22	--	6.46	--	--	CTR I
Cyanide, Total	µg/L	4.26	--	8.54	--	--	CTR V
Mercury, Total Recoverable	lbs/month	0.0016 <sup>(3)</sup>	--	--	--	--	PERF E
Silver, Total Recoverable	µg/L	0.49	--	0.99	--	--	CTR E
Zinc, Total Recoverable	µg/L	30	--	60	--	--	CTR
ORGANICS							
Diazinon	µg/L	0.04	--	0.08	--	--	DFG
Dichlorobromomethane	µg/L	0.56	--	1.12	--	--	CTR O
2,6-Dinitrotoluene	µg/L	0.05	--	0.1	--	--	DWHA
1,2-Diphenylhydrazine	µg/L	0.04	--	0.08	--	--	CTR R
Tetrachloroethene	µg/L	0.8	--	1.6	--	--	CTR
NON-CONVENTIONALS							
Aluminum, Total Recoverable	µg/L	71.23	--	142.91	--	--	NAWQC D
Ammonia, Total (as N)	mg/L	1.0	--	3.7	--	--	NAWQC E
Electrical Conductivity	µmhos/cm	426 <sup>(4)</sup>	--	--	--	--	PERF
Flow	MGD	--	--	0.71	--	--	DC R
Iron, Total Recoverable	µg/L	300 <sup>(4)</sup>	--	--	--	--	SEC MCL
Manganese, Total Recoverable	µg/L	50 <sup>(4)</sup>	--	--	--	--	SEC MCL
Nitrate (as NO <sub>3</sub> )	mg/L	45	--	--	--	--	MCL
Settleable Solids	ml/L	0.1	--	0.2	--	--	PO
Total Coliform	MPN/100 mL	23 <sup>(5)</sup>	2.2 <sup>(6)</sup>	--	--	240	DPH
Turbidity	NTU	--	--	2 <sup>(7)</sup>	--	10	TTC
Residual Chlorine	µg/L	--	11 <sup>(8)</sup>	19 <sup>(9)</sup>	--	--	NAWQC
Acute Toxicity	%survival	--	--	--	--	<sup>(10)</sup>	BP

(1) CFR – Based on federal regulations contained in 40 CFR Part 133.

BP – Based on water quality objectives contained in the Basin Plan.

CTR – Based on water quality criteria contained in the California Toxics Rule, and applied as specified in the SIP.

DFG – Based on water quality criteria established by the Department of Fish and Game to protect freshwater aquatic life.

DWHA – Based on USEPA's Drinking Water Health Advisory.

NAWQC – Based on USEPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life.

PERF – Based on recent facility performance.

DF – Based on the design capacity of the Facility.

PO – Based on the previous order (Order No. 5-00-173).

SEC MCL – Based on California Secondary Maximum Contaminant Levels.

MCL – Based on California Primary Maximum Contaminant Levels.

DPH – Based on California Department of Public Health reclamation criteria for the reuse of wastewater.

TTC – Tertiary treatment capability. These limitations reflect the level of treatment that is capable of a properly operated tertiary treatment facility.

(2) In addition to concentration-based limitations and mass-based limitations for BOD<sub>5</sub> and TSS, the Discharger is required to meet an 85 percent removal discharge specification.



- (3) Expressed as a total monthly mass load.
- (4) Expressed as an annual average.
- (5) Not to be exceeded more than once in any 30-day period.
- (6) Expressed as a 7-day median.
- (7) Turbidity not to exceed 2 NTU as a daily average or 5 NTU more than 5% of the time within a 24-hour period.
- (8) Applied as a 4-day average.
- (9) Applied as a 1-hour average.
- (10) Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:
  - i. 70%, minimum for any one bioassay; and
  - ii. 90%, median for any three consecutive bioassays.

## E. Interim Effluent Limitations

1. **Constituents.** The SIP, section 2.2.1, requires that if a compliance schedule is granted for a CTR or NTR constituent, the Regional Water Board shall establish interim requirements and dates for their achievement in the NPDES permit. The interim limitations must be based on current treatment plant performance or existing permit limitations, whichever is more stringent. The State Water Board has held that the SIP may be used as guidance for non-CTR constituents. Therefore, the SIP requirement for interim effluent limitations has been applied to both CTR and non-CTR constituents in this Order.

The interim limitations for aluminum; copper; cyanide; diazinon; dichlorobromomethane; 1,2-diphenylhydrazine; 2,6-dinitrotoluene; silver; tetrachloroethene; and zinc in this Order are based on the current treatment plant performance. In developing the interim limitation, where there are 10 sampling data points or more, sampling and laboratory variability is accounted for by establishing interim limits that are based on normally distributed data where 99.9% of the data points will lie within 3.3 standard deviations of the mean (*Basic Statistical Methods for Engineers and Scientists, Kennedy and Neville, Harper and Row*). Therefore, the interim limitations in this Order are established as the mean plus 3.3 standard deviations of the available data.

When there are less than 10 sampling data points available, the *Technical Support Document for Water Quality- Based Toxics Control* ((EPA/505/2-90-001), TSD) recommends a coefficient of variation of 0.6 be utilized as representative of wastewater effluent sampling. The TSD recognizes that a minimum of 10 data points is necessary to conduct a valid statistical analysis. The multipliers contained in Table 5-2 of the TSD are used to determine a maximum daily limitation based on a long-term average objective. In this case, the long-term average objective is to maintain, at a minimum, the current plant performance level. Therefore, when there are less than 10 sampling points for a constituent, interim limitations are based on 3.11 times the maximum observed effluent concentration to obtain the daily maximum interim limitation (TSD, Table 5-2).

The Regional Water Board finds that the Discharger can undertake source control and treatment plant measures to maintain compliance with the interim limitations included in this Order. Interim limitations are established when compliance with NTR- and CTR-based effluent limitations cannot be achieved by the existing discharge. Discharge of constituents in concentrations in excess of the final effluent limitations, but in compliance with the interim effluent limitations, can significantly

degrade water quality and adversely affect the beneficial uses of the receiving stream on a long-term basis. The interim limitations, however, establish an enforceable ceiling concentration until compliance with the final effluent limitation can be achieved.

Table F-20 summarizes the calculations of the interim effluent limitations for aluminum; copper; cyanide; diazinon; dichlorobromomethane; 1,2-diphenylhydrazine; 2,6-dinitrotoluene; silver; tetrachloroethene; and zinc:

**Table F-22. Interim Effluent Limitation Calculation Summary**

Parameter	MEC	Mean	Std. Dev.	# of Samples	Interim Limitation
Aluminum, Total Recoverable (µg/L)	110	--	--	4	342.1
Copper, Total Recoverable (µg/L)	12	--	--	4	37.32
Cyanide (µg/L)	6	--	--	4	18.66
Diazinon (µg/L)	0.38	--	--	4	1.18
Dichlorobromomethane (µg/L)	1.5	--	--	4	4.67
1,2-Diphenylhydrazine (µg/L)	0.2	--	--	4	0.62
2,6-Dinitrotoluene (µg/L)	1.1	--	--	4	3.42
Silver, Total Recoverable (µg/L)	1.2	--	--	4	3.73
Tetrachloroethene (µg/L)	1.5	--	--	4	4.67
Zinc, Total Recoverable (µg/L)	100	--	--	4	311

- The final “floating” effluent limitations for ammonia from the previous Order were established as interim effluent limitations in this Order.

## F. Land Discharge Specifications

[NOT APPLICABLE]

## G. Reclamation Specifications

[NOT APPLICABLE]

## V. RATIONALE FOR RECEIVING WATER LIMITATIONS

Basin Plan water quality objectives to protect the beneficial uses of surface water and groundwater include numeric objectives and narrative objectives, including objectives for chemical constituents, toxicity, and tastes and odors. The toxicity objective requires that surface water and groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective requires that surface water and groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use or that exceed the maximum contaminant levels (MCLs) in Title 22, CCR. The tastes and odors objective states that surface water and groundwater shall not contain taste- or odor-

producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plan requires the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, toxic substances, radionuclides, or taste and odor producing substances in concentrations that adversely affect domestic drinking water supply, agricultural supply, or any other beneficial use.

## A. Surface Water

1. CWA section 303(a-c), requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Regional Water Board adopted water quality criteria as water quality objectives in the Basin Plan. The Basin Plan states that “[t]he numerical and narrative water quality objectives define the least stringent standards that the Regional Board will apply to regional waters in order to protect the beneficial uses.” The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains Receiving Surface Water Limitations based on the Basin Plan numerical and narrative water quality objectives for bacteria, biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, and turbidity.

Numeric Basin Plan objectives for bacteria, dissolved oxygen, pH, temperature, and turbidity are applicable to this discharge and have been incorporated as Receiving Surface Water Limitations. Rationale for these numeric receiving surface water limitations are as follows:

- a. **Bacteria.** The Basin Plan includes a water quality objective that “[i]n water designated for contact recreation (REC-1), the fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed a geometric mean of 200/100 ml, nor shall more than ten percent of the total number of samples taken during any 30-day period exceed 400/100 ml.” Numeric Receiving Water Limitations for bacteria are included in this Order and are based on the Basin Plan objective.
- b. **Biostimulatory Substances.** The Basin Plan includes a water quality objective that “[W]ater shall not contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.” Receiving Water Limitations for biostimulatory substances are included in this Order and are based on the Basin Plan objective.
- c. **Chemical Constituents.** The Basin Plan includes a water quality objective that “[W]aters shall not contain chemical constituents in concentrations that adversely affect beneficial uses.” Receiving Water Limitations for chemical constituents are included in this Order and are based on the Basin Plan objective.
- d. **Color.** The Basin Plan includes a water quality objective that “[W]ater shall be free of discoloration that causes nuisance or adversely affects beneficial uses.”

- Receiving Water Limitations for color are included in this Order and are based on the Basin Plan objective. T
- e. **Dissolved Oxygen.** The Basin Plan includes a water quality objective that E  
“*[W]ithin the legal boundaries of the Delta, the dissolved oxygen concentrations shall not be reduced below: 7.0 mg/L in the Sacramento River (below the I N  
Street Bridge) and in all Delta waters west of the Antioch Bridge; 6.0 mg/L in the T  
San Joaquin River (between Turner Cut and Stockton, 1 September through 30 A  
November); and 5.0 mg/L in all other Delta waters except those bodies of water which are constructed for special purposes and from which fish have been T  
excluded or where the fishery is not important as a beneficial use.*” Numeric Receiving Water Limitations for dissolved oxygen are included in this Order and I  
are based on the Basin Plan objective.
- f. **Floating Material.** The Basin Plan includes a water quality objective that “*[W]ater shall not contain floating material in amounts that cause nuisance or adversely V  
affect beneficial uses.*” Receiving Water Limitations for floating material are E  
included in this Order and are based on the Basin Plan objective.
- g. **Oil and Grease.** The Basin Plan includes a water quality objective that “*[W]aters shall not contain oils, greases, waxes, or other materials in concentrations that O  
cause nuisance, result in a visible film or coating on the surface of the water or R  
on objects in the water, or otherwise adversely affect beneficial uses.*” Receiving Water Limitations for oil and grease are included in this Order and are based on D  
the Basin Plan objective.
- h. **pH.** The Basin Plan includes water quality objective that “*[T]he pH shall not be E  
depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated COLD or WARM R  
beneficial uses*” This Order includes receiving water limitations for both pH range and pH change.
- The Basin Plan allows an appropriate averaging period for pH change in the receiving stream. Since there is no technical information available that indicates that aquatic organisms are adversely affected by shifts in pH within the 6.5 to 8.5 range, an averaging period is considered appropriate and a monthly averaging period for determining compliance with the 0.5 receiving water pH limitation is included in this Order.
- i. **Pesticides.** The Basin Plan includes a water quality objective for pesticides beginning on page III-6.00. Receiving Water Limitations for pesticides are included in this Order and are based on the Basin Plan objective.
- j. **Radioactivity.** The Basin Plan includes a water quality objective that  
“*[R]adionuclides shall not be present in concentrations that are harmful to human, plant, animal or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal or aquatic life.*” The Basin Plan states further that “*[A]t a minimum, waters designated for use as domestic or municipal supply (MUN) shall not*

- contain concentrations of radionuclides in excess of the maximum contaminant levels (MCLs) specified in Table 4 (MCL Radioactivity) of Section 64443 of Title 22 of the California Code of Regulations...* Receiving Water Limitations for radioactivity are included in this Order and are based on the Basin Plan objective. T  
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- k. **Sediment.** The Basin Plan includes a water quality objective that “[T]he suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses” Receiving Water Limitations for suspended sediments are included in this Order and are based on the Basin Plan objective. T  
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- l. **Settleable Material.** The Basin Plan includes a water quality objective that “[W]aters shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.” Receiving Water Limitations for settleable material are included in this Order and are based on the Basin Plan objective. I  
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- m. **Suspended Material.** The Basin Plan includes a water quality objective that “[W]aters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.” Receiving Water Limitations for suspended material are included in this Order and are based on the Basin Plan objective. O  
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- n. **Taste and Odors.** The Basin Plan includes a water quality objective that “[W]ater shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.” Receiving Water Limitations for taste- or odor-producing substances are included in this Order and are based on the Basin Plan objective. D  
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- o. **Temperature.** Jackson Creek has the beneficial uses of cold freshwater habitat. The Basin Plan includes the objective that “[a]t no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5°F above natural receiving water temperature.” This Order includes a receiving water limitation based on this objective.
- p. **Toxicity.** The Basin Plan includes a water quality objective that “[A]ll waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.” Receiving Water Limitations for toxicity are included in this Order and are based on the Basin Plan objective.
- q. **Turbidity.** The Basin Plan includes a water quality objective that “[I]ncreases in turbidity attributable to controllable water quality factors shall not exceed the following limits:

- *Where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU.*
- *Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent.*
- *Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs.*
- *Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.”*

A numeric Receiving Surface Water Limitation for turbidity is included in this Order and is based on the Basin Plan objective for turbidity.

## B. Groundwater

**[NOT APPLICABLE]**

## VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

Section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorizes the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (MRP), Attachment E of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this facility.

### A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the wastewater and to assess compliance with effluent limitations (e.g., BOD<sub>5</sub> and TSS percent reduction requirements). Continuous flow monitoring and weekly monitoring for BOD<sub>5</sub> and TSS have been carried over from Monitoring and Reporting Program No. 5-00-173.

### B. Effluent Monitoring

1. Pursuant to the requirements of 40 CFR §122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream. Effluent monitoring requirements for BOD<sub>5</sub>, pH, TSS, ammonia, flow, nitrate (as NO<sub>3</sub>), settleable solids, total coliform, total residual chlorine, and turbidity have been carried over from Monitoring and Reporting Program No. 5-00-173 to determine compliance with effluent limitations for these parameters.

Monitoring data collected over the previous permit term for electrical conductivity, methyl tertiary-butyl ether, and total dissolved solids did not demonstrate reasonable potential to exceed water quality objectives/criteria. However, monitoring requirements for electrical conductivity, methyl tertiary-butyl ether, and total dissolved solids have been carried over to continue to evaluate compliance with water quality objectives/criteria.

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Monitoring data submitted by the Discharger during the previous permit term indicates that the discharge has reasonable potential to exceed water quality criteria for aluminum; copper; cyanide; diazinon; dichlorobromomethane; 2,6-dinitrotoluene; 1,2-diphenylhydrazine; iron; manganese; silver; tetrachloroethene; and zinc. Monthly monitoring has been established for aluminum; copper; cyanide; diazinon; dichlorobromomethane; 2,6-dinitrotoluene; 1,2-diphenylhydrazine; iron; manganese; silver; tetrachloroethene; and zinc to determine compliance with the applicable effluent limitations.

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This Order establishes a mass-based effluent limit for mercury in order to regulate discharges of mercury into waters that drain into the Delta. Quarterly monitoring has been established to determine compliance with the applicable effluent limitation.

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Due to concerns over high ammonia concentrations in the effluent over the previous permit term, this Order establishes daily monitoring for ammonia to determine compliance with the interim effluent limitations for ammonia beginning the effective date of this Order and ending 17 May 2010. Because these interim limitations are “floating” limits, concurrent pH and temperature monitoring on a daily basis is required during the interim period. The monitoring frequency for ammonia, pH, and temperature has been retained from Order No. 5-00-173 to determine compliance with the final effluent limitations for ammonia beginning 18 May 2010.

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As discussed in Section IV.C.3.u of this Fact Sheet, although there were several detections of 2,3,7,8-TCDD congeners (OCDD and OCDF), most of the values were estimated and therefore no WQBELs were established. To collect the data necessary to determine the prevalence of the detected 2,3,7,8-TCDD congeners in the Facility effluent, annual monitoring will be required in this Order for OCDD and OCDF.

Priority pollutant data for the effluent has been provided by the Discharger over the term of the previous Order, and was used to conduct a meaningful reasonable potential analysis. However, in accordance with Section 1.3 of the SIP, periodic monitoring for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. Periodic priority pollutant monitoring is also necessary to provide data that would account for changes in the service population. Thus, the monitoring frequency for priority pollutants has been established quarterly during the third year of the permit term.

## C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Semi-annual 96-hour bioassay testing is carried over from Monitoring and Reporting Program No. 5-00-173 in order to demonstrate compliance with the effluent limitation for acute toxicity.
2. **Chronic Toxicity.** Semi-annual chronic whole effluent toxicity testing is carried over from Monitoring and Reporting Program No. 5-00-173 in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

## D. Receiving Water Monitoring

### 1. Surface Water

- a. Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream. The receiving water monitoring requirements from Monitoring and Reporting Program No. 5-00-173 have been carried over to this Order.
- b. Quarterly monitoring for priority pollutants up stream of the discharge point is required during the third year of the permit term to collect the necessary data to determine reasonable potential as required in section 1.2 of the SIP. The pH and hardness (as  $\text{CaCO}_3$ ) of the up stream receiving water shall also be monitoring concurrently with the priority pollutants to ensure the water quality criteria/objectives are correctly adjusted for the receiving water when determining reasonable potential as specified in section 1.3 of the SIP.
- c. Quarterly monitoring for hardness of the upstream receiving water is established to ensure the water quality criteria/objectives are correctly adjusted for the receiving water when determining reasonable potential as specified in section 1.3 of the SIP.

### 2. Groundwater

[NOT APPLICABLE]

## E. Other Monitoring Requirements

### 1. Biosolids Monitoring

Biosolids monitoring is required to ensure compliance with the biosolids disposal requirements (Special Provisions VI.C.5.a.). Biosolids disposal requirements are imposed pursuant to 40 CFR Part 503 to protect public health and prevent groundwater degradation.

### 2. Water Supply Monitoring

Water supply monitoring is required to evaluate the relative contribution of salinity



from the source water to the effluent. In particular, annual monitoring for electrical conductivity, total dissolved solids and standard minerals is required.

## VII. RATIONALE FOR PROVISIONS

### A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with section 122.41, and additional conditions applicable to specified categories of permits in accordance with section 122.42, are provided in Attachment D. The Discharger must comply with all standard provisions and with those additional conditions that are applicable under section 122.42.

Section 122.41(a)(1) and (b) through (n) establish conditions that apply to all State-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with section 123.25, this Order omits federal conditions that address enforcement authority specified in sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

### B. Special Provisions

#### 1. Reopener Provisions

- a. **Mercury.** This reopener provision allows the Regional Water Board to reopen this Order if mercury is found to be causing toxicity based on acute or chronic toxicity test results, if a TMDL program is adopted, or if the Regional Water Board determines that a mercury offset program is feasible for Dischargers subject to a NPDES permit.
- b. **Pollution Prevention.** This Order requires the Discharger prepare pollution prevention plans following CWC section 13263.3(d)(3) for aluminum; ammonia; copper; cyanide; diazinon; dichlorobromomethane; 1,2-diphenylhydrazine; 2,6-dinitrotoluene; tetrachloroethene; and zinc. This reopener provision allows the Regional Water Board to reopen this Order for addition and/or modification of effluent limitations and requirements for these constituents based on a review of the pollution prevention plans.
- c. **Whole Effluent Toxicity.** This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity through a Toxicity Reduction Evaluation (TRE). This Order may be reopened to include a numeric chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if a numeric chronic toxicity water quality objective is adopted by the State Water Board, this

Order may be reopened to include a numeric chronic toxicity limitation based on that objective.

- d. **Water Effects Ratio (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable priority pollutant inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable when developing effluent limitations established in this Order. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.
- e. **Jackson Creek Beneficial Use Attainment Study.** This Order requires the Discharger to conduct a Use Attainment Study for Jackson Creek, downstream of the discharge location. This reopener provision allows the Regional Water Board to reopen this Order for addition and/or modification of effluent limitations and requirements based on a review of the findings of this study.

## 2. Special Studies and Additional Monitoring Requirements

- a. **Chronic Whole Effluent Toxicity Requirements.** The Basin Plan contains a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at III-8.00.) Attachment E of this Order requires semi-annual chronic WET monitoring for demonstration of compliance with the narrative toxicity objective.

In addition to WET monitoring, this provision requires the Discharger to submit to the Regional Water Board an Initial Investigative Toxicity Reduction Evaluation (TRE) Work Plan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. The provision also includes a numeric toxicity monitoring trigger and requirements for accelerated monitoring, as well as, requirements for TRE initiation if a pattern of toxicity is demonstrated.

**Monitoring Trigger.** A numeric toxicity monitoring trigger of  $> 1$  TUc (where TUc =  $100/\text{NOEC}$ ) is applied in the provision, because this Order does not allow any dilution for the chronic condition. Therefore, a TRE is triggered when the effluent exhibits a pattern of toxicity at 100% effluent.

**Accelerated Monitoring.** The provision requires accelerated WET testing when a regular WET test result exceeds the monitoring trigger. The purpose of accelerated monitoring is to determine, in an expedient manner, whether there is a pattern of toxicity before requiring the implementation of a TRE. Due to possible seasonality of the toxicity, the accelerated monitoring should be performed in a timely manner, preferably taking no more than 2 to 3 months to complete.

The provision requires accelerated monitoring consisting of four chronic toxicity tests every two weeks using the species that exhibited toxicity. Guidance regarding accelerated monitoring and TRE initiation is provided in the *Technical Support Document for Water Quality-based Toxics Control*, EPA/505/2-90-001, March 1991 (TSD). The TSD at page 118 states, "EPA recommends if toxicity is repeatedly or periodically present at levels above effluent limits more than 20 percent of the time, a TRE should be required." Therefore, four accelerated monitoring tests are required in this provision. If no toxicity is demonstrated in the four accelerated tests, then it demonstrates that toxicity is not present at levels above the monitoring trigger more than 20 percent of the time (only 1 of 5 tests are toxic, including the initial test). However, notwithstanding the accelerated monitoring results, if there is adequate evidence of a pattern of effluent toxicity (i.e., toxicity present exceeding the monitoring trigger more than 20 percent of the time), the Executive Officer may require that the Discharger initiate a TRE.

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See the WET Accelerated Monitoring Flow Chart (Figure F-1), below, for further clarification of the accelerated monitoring requirements and for the decision points for determining the need for TRE initiation.

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**TRE Guidance.** The Discharger is required to prepare a TRE Work Plan in accordance with USEPA guidance. Numerous guidance documents are available, as identified below:

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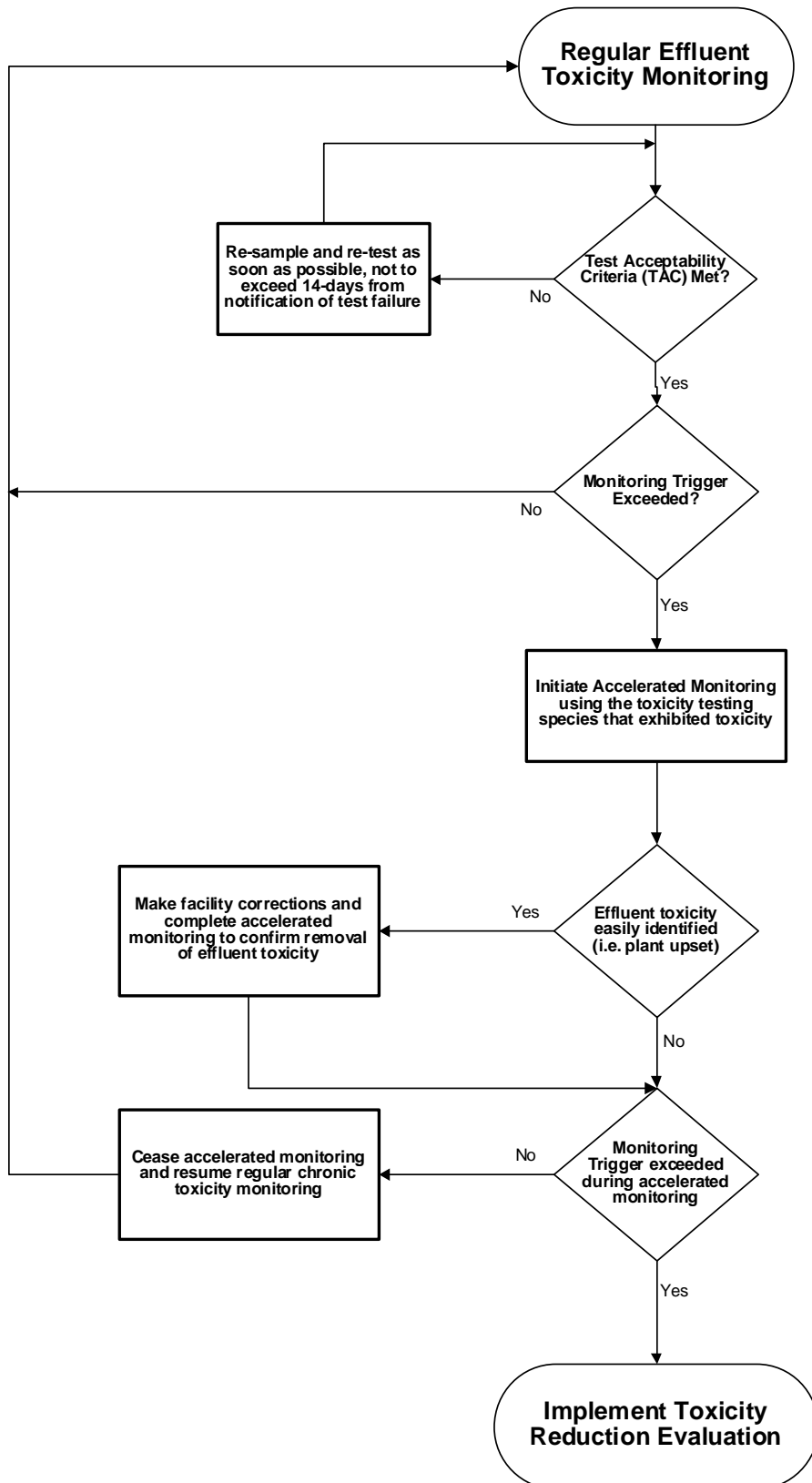
- *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants*, EPA/833B-99/002, August 1999.
- Generalized Methodology for Conducting Industrial TREs, EPA/600/2-88/070, April 1989.
- *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures*, Second Edition, EPA 600/6-91/005F, February 1991.
- *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I*, EPA 600/6-91/005F, May 1992.
- *Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting acute and Chronic Toxicity*, Second Edition, EPA 600/R-92/080, September 1993.
- *Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity*, Second Edition, EPA 600/R-92/081, September 1993.

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- *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, Fifth Edition, EPA-821-R-02-012, October 2002.
- *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, EPA-821-R-02-013, October 2002.
- *Technical Support Document for Water Quality-based Toxics Control*, EPA/505/2-90-001, March 1991.

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**Figure F-1  
WET Accelerated Monitoring Flow Chart**



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- b. **Jackson Creek Beneficial Use Attainment Study.** Due to concerns expressed by the Department of Fish and Game related to the potential impacts of removal of the effluent from the Facility when 20:1 dilution is not provided in the creek, the Discharger is required to develop a work plan and implement a study to 1) further determine the characteristics needed in Jackson Creek downstream of the discharge to support applicable non-human health protection beneficial uses (agricultural supply for irrigation and stock watering, industrial process supply and service supply, warm freshwater aquatic habitat, cold freshwater aquatic habitat, warm and cold fish migration habitat, warm spawning habitat, wildlife habitat, and navigation), and 2) identify the minimum flow necessary to meet downstream existing water rights.

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The work plan should be developed in consultation with the Department of Fish and Game and Regional Water Board staff. The work plan will be due within 6 months after the adoption date of the permit; the study shall be completed within 24 months of approval of the workplan.

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### 3. Best Management Practices and Pollution Prevention

- a. **Salinity Evaluation and Minimization Plan.** An Evaluation and Minimization Plan for salinity is required in this Order to ensure adequate measures are developed and implemented by the Discharger to reduce the discharge of salinity to Jackson Creek.
- b. **Pollution Prevention Plan (PPP) for Aluminum; Ammonia; Copper; Cyanide; Diazinon; Dichlorobromomethane; 1,2-Diphenylhydrazine; 2,6-Dinitrotoluene; Silver; Tetrachloroethene; and Zinc.** A PPP for aluminum; ammonia; copper; cyanide; diazinon; dichlorobromomethane; 1,2-diphenylhydrazine; 2,6-dinitrotoluene; silver; tetrachloroethene; and zinc is required in this Order per CWC section 13263.3(d)(1)(D) as part of the interim effluent limitations for aluminum, ammonia; copper; cyanide; diazinon; dichlorobromomethane; 1,2-diphenylhydrazine; 2,6-dinitrodoluene; silver; tetrachloroethene; and zinc . The PPP shall be developed in conformance with CWC section 13263.3(d)(3) as outlined in subsection b., below.
- c. **CWC section 13263.3(d)(3) Pollution Prevention Plans.** The pollution prevention plans required for aluminum; ammonia; copper; cyanide; diazinon; dichlorobromomethane; 1,2-diphenylhydrazine; 2,6-dinitrotoluene; silver; tetrachloroethene; and zinc shall, at minimum, meet the requirements outlined in CWC section 13263.3(d)(3). The minimum requirements for the pollution prevention plans include the following:
- An estimate of all of the sources of a pollutant contributing, or potentially contributing, to the loadings of a pollutant in the treatment plant influent.
  - An analysis of the methods that could be used to prevent the discharge of the pollutants into the Facility, including application of local limits to industrial or commercial dischargers regarding pollution prevention techniques, public

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education and outreach, or other innovative and alternative approaches to reduce discharges of the pollutant to the Facility. The analysis also shall identify sources, or potential sources, not within the ability or authority of the Discharger to control, such as pollutants in the potable water supply, airborne pollutants, pharmaceuticals, or pesticides, and estimate the magnitude of those sources, to the extent feasible.

- iii. An estimate of load reductions that may be attained through the methods identified in subparagraph ii.
  - iv. A plan for monitoring the results of the pollution prevention program.
  - v. A description of the tasks, cost, and time required to investigate and implement various elements in the pollution prevention plan.
  - vi. A statement of the Discharger's pollution prevention goals and strategies, including priorities for short-term and long-term action, and a description of the Discharger's intended pollution prevention activities for the immediate future.
  - vii. A description of the Discharger's existing pollution prevention programs.
  - viii. An analysis, to the extent feasible, of any adverse environmental impacts, including cross-media impacts or substitute chemicals that may result from the implementation of the pollution prevention program.
  - ix. An analysis, to the extent feasible, of the costs and benefits that may be incurred to implement the pollution prevention program.
- d. **2,3,7,8-TCCD Evaluation and Minimization Plan.** An Evaluation and Minimization Plan for detected dioxins (OCDD) and furans (OCDF) is required in this Order to ensure adequate measures are developed and implemented by the Discharger to reduce the discharge of dioxin and furan congeners to the receiving water.

#### 4. Construction, Operation, and Maintenance Specifications

[NOT APPLICABLE]

#### 5. Special Provisions for Municipal Facilities (POTWs Only)

- a. **Biosolids.** The use and disposal of biosolids is regulated under federal and State laws and regulations, including permitting requirements and technical standards included in 40 CFR Part 503. The Discharger is required to comply with the standards and time schedules contained in 40 CFR Part 503.

Title 27, CCR, Division 2, Subdivision 1, section 20005 establishes approved methods for the disposal of collected screenings, residual sludge, biosolids, and

other solids removed from liquid wastes. Requirements to ensure the Discharger disposes of solids in compliance with State and federal regulations has been included in this Order.

- b. **Collection System.** On 2 May 2006, the State Water Board adopted State Water Board Order No. 2006-0003, a Statewide General WDR for Sanitary Sewer Systems. The Discharger shall be subject to the requirements of Order No. 2006-0003 and any future revisions thereto. Order No. 2006-0003 requires that all public agencies that currently own or operate sanitary sewer systems apply for coverage under the General WDR. By 2 November 2006, the Discharger is required by that Order, not incorporated by reference herein, to apply for coverage under State Water Board Order No. 2006-0003 for operation of its wastewater collection system.

Regardless of the coverage obtained under Order No. 2006-0003, the Discharger's collection system is part of the treatment system that is subject to this Order. As such, pursuant to federal regulations, the Discharger must properly operate and maintain its collection system [40 CFR section 122.41(e)], report any non-compliance [40 CFR section 122.41(l)(6) and (7)], and mitigate any discharge from the collection system in violation of this Order [40 CFR section 122.41(d)].

## 6. Other Special Provisions

- a. Sections 122.41(l)(3) and 122.61 of the Code of Federal Regulations establish requirements for the transfer of an NPDES permit. Special Provision VI.C.6.b of this Order requires the Discharger to comply with federal regulations for the transfer of NPDES permits in the event of a change of ownership.

## 7. Compliance Schedules

The use and location of compliance schedules in the permit depends on the Discharger's ability to comply and the source of the applied water quality criteria.

- a. In accordance with the SIP, the Discharger submitted a request and justification (dated **7 August 2007**), for a compliance schedule for copper; cyanide; dichlorobromomethane; 1,2-diphenylhydrazine; 2,6-dinitrotoluene; silver; tetrachloroethene; and zinc. The compliance schedule justification included all items specified in Paragraph 3, items (a) through (d), of Section 2.1 of the SIP. This Order establishes a compliance schedule for the final WQBELs for aluminum; ammonia; copper; cyanide; diazinon; dichlorobromomethane; 1,2-diphenylhydrazine; silver; tetrachloroethene; and zinc and requires full compliance by 18 May 2010.
- b. As part of the **7 August 2007** infeasibility analysis, the Discharger also provided a justification for aluminum, ammonia, and diazinon. This Order establishes a compliance schedule for the final WQBELs for ammonia, and diazinon and requires full compliance by 18 May 2010.



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- c. As part of the **7 August 2007** infeasibility analysis, the Discharger states that a site-specific WER study may be necessary for aluminum. In order to provide adequate time for a WER study, this Order grants a compliance schedule for the compliance with final aluminum WQBELs of [almost] five (5) years (beginning the effective date of this Order and ending on the expiration date of this Order). The Discharger may also comply with the final aluminum WQBELs through operational or structural changes at the Facility.
  - d. As part of the **7 August 2007** infeasibility analysis, the Discharger provides the general rationale for why a compliance schedule is required and includes several proposed approaches for complying with the effluent limitations established in the Order. However the Discharger acknowledges that the final compliance strategy will be based on the results of the use attainment studies and subsequent requirements to be included in the Order (i.e., will the discharge prohibition unless 20:1 dilution is provided and the requirement for Title 22 equivalent treatment be justified).
  - e. Provision E.4 of the previous Order (No. 5-00-173), required the Discharger to study flows and dilution of Jackson Creek and Lake Amador and evaluate alternatives to the existing discharge to protect public health. Provision VI.C.7.c. is based on the Regional Water Board's concurrence with the California Department of Health Services (recently changed to Department of Public Health or DPH) recommendation that downstream domestic water supply uses must be protected by requiring discharges from this wastewater treatment plant to receive a minimum of 20:1 dilution. The Discharger was unable to determine a suitable alternative to the discharge to Jackson Creek during the term of the previous permit. Due to the requirement that discharges from wastewater treatment facilities receive a minimum of 20:1 dilution for the protection of drinking water supplies and public health, the Regional Water Board has established a Discharge Prohibition which prohibits the discharge of wastewater by the Discharger to Jackson Creek when a minimum dilution of 20:1 is not provided by the receiving water. The Discharger is required to re-evaluate wastewater handling and disposal methods, and other alternative to ensure compliance with Discharge Prohibition III.E **within five (5) years of the adoption date of the Order.**

## VIII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, Central Valley Region (Regional Water Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the City of Jackson Wastewater Treatment Plant. As a step in the WDR adoption process, the Regional Water Board staff has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

### A. Notification of Interested Parties

The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided in the local Ledger-Dispatch newspaper on 17 August 2007.

## **B. Written Comments**

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments must be submitted either in person or by mail to the Executive Office at the Regional Water Board at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the Regional Water Board, written comments should be received at the Regional Water Board offices by 12:00 p.m. (noon) on **20 September 2007**.

## **C. Public Hearing**

The Regional Water Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: **25/26 October 2007**  
Time: 8:30 am  
Location: Regional Water Quality Control Board, Central Valley Region  
11020 Sun Center Dr., Suite #200  
Rancho Cordova, CA 95670

Interested persons are invited to attend. At the public hearing, the Regional Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our Web address is <http://www.waterboards.ca.gov/rwqcb5/> where you can access the current agenda for changes in dates and locations.

## **D. Waste Discharge Requirements Petitions**

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Water Board's action to the following address:

State Water Resources Control Board  
Office of Chief Counsel  
P.O. Box 100, 1001 I Street  
Sacramento, CA 95812-0100

### **E. Information and Copying**

The Report of Waste Discharge (RWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling 916-464-3291.

### **F. Register of Interested Persons**

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference this facility, and provide a name, address, and phone number.

### **G. Additional Information**

Requests for additional information or questions regarding this order should be directed to Diana Messina at 916-464-4828 or [dcmessina@waterboards.ca.gov](mailto:dcmessina@waterboards.ca.gov).

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## ATTACHMENT G - REASONABLE POTENTIAL SUMMARY

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Aluminum	µg/L	110	50	87	750 <sup>(1)</sup>	87 <sup>(1)</sup>	--	--	--	200	Yes
Ammonia <sup>(2)</sup>	mg/L	16	ND	1.33	5.62 <sup>(1)(3)</sup>	1.33 <sup>(1)(4)</sup>	--	--	--	--	Yes
Ammonia <sup>(5)</sup>	mg/L	16	ND	1.14	5.62 <sup>(1)(3)</sup>	1.14 <sup>(1)(6)</sup>	--	--	--	--	Yes
Antimony, Total Recoverable	µg/L	0.5	0.2	6	--	--	--	--	--	6	No
Arsenic, Total Recoverable	µg/L	1.1	1.2	10	340	150	--	--	--	10	No
Barium	µg/L	7.9	37	1,000	--	--	--	--	--	1,000	No
Butylbenzyl Phthalate	µg/L	0.061	ND	3	940 <sup>(1)</sup>	3 <sup>(1)</sup>	3,000	5,200	--	140 <sup>(7)</sup>	No
Di-N-Butyl Phthalate	µg/L	2.3	2.1	3	940 <sup>(1)</sup>	3 <sup>(1)</sup>	2,700	12,000	--	700 <sup>(7)</sup>	No
Cadmium, Total Recoverable <sup>(2)</sup>	µg/L	0.05	ND	1.29	1.79 <sup>(8)</sup>	1.29 <sup>(8)</sup>	--	--	--	5	No
Cadmium, Total Recoverable <sup>(5)</sup>	µg/L	0.05	ND	1.29	4.66 <sup>(9)</sup>	1.29 <sup>(10)</sup>	--	--	--	5	No
Carbofuran	µg/L	1.74	ND	18	--	--	--	--	--	--	No
Chloride	µg/L	46,000	6,500	230,000	860,000 <sup>(1)</sup>	230,000 <sup>(1)</sup>	--	--	--	--	No
Chloroform	µg/L	7.9	ND	80	--	--	--	--	--	80	No
Chromium, Total Recoverable	µg/L	0.9	1.0	50	91.9	110	--	--	--	50	No
Copper, Total Recoverable <sup>(2)</sup>	µg/L	12	1.2	6.46	6.46 <sup>(8)</sup>	6.46 <sup>(8)</sup>	1,300	--	--	1,300	Yes
Copper, Total Recoverable <sup>(5)</sup>	µg/L	12	1.2	6.46	6.46 <sup>(10)</sup>	4.63 <sup>(10)</sup>	1,300	--	--	1,300	Yes
Cyanide	µg/L	6	1.9	5.2	22	5.2	700	220,000	--	--	Yes
2,4-D	µg/L	8.3	ND	70	--	--	--	--	--	70	No
Diazinon	µg/L	0.38	ND	0.05	0.08 <sup>(11)</sup>	0.05 <sup>(11)</sup>	--	--	--	--	Yes

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Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
1,2-Dichlorobenzene	µg/L	0.036	ND	24	1,120 <sup>(1)</sup>	763 <sup>(1)</sup>	2,700	17,000	--	--	No
1,4-Dichlorobenzene	µg/L	0.2	ND	5	1,120 <sup>(1)</sup>	763 <sup>(1)</sup>	400	2,600	--	--	No
Dichlorobromomethane	µg/L	1.5	ND	0.56	--	--	0.56	46	--	--	Yes
2,4-Dichlorophenol	µg/L	0.08	ND	0.3	--	--	93	790	--	0.3763 <sup>(11)</sup>	No
2,4-Dimethylphenol	µg/L	0.14	ND	100	--	--	540	2,300	--	100 <sup>(12)</sup>	No
Dimethyl Phthalate	µg/L	0.063	ND	3	940	3 <sup>(1)</sup>	313,000	2,900,000	--	--	No
2,6-Dinitrotoluene	µg/L	1.1	ND	0.05	330 <sup>(1)</sup>	230 <sup>(1)</sup>	--	--	--	0.05 <sup>(7)</sup>	Yes
1,2-Diphenylhydrazine	µg/L	0.19	ND	0.04	--	--	0.04	0.54	--	--	Yes
TCDD Equivalents	µg/L	5.6 x 10 <sup>-8</sup>	3.0 x 10 <sup>-8</sup>	1.3 x 10 <sup>-8</sup>	--	--	1.3 x 10 <sup>-8</sup>	--	--	0.00003	Yes
Glyphosate	µg/L	18	ND	700	--	--	--	--	--	700	No
Iron	µg/L	60	360	300	--	1,000 <sup>(1)</sup>	--	--	--	300	Yes
Lead, Total Recoverable <sup>(2)</sup>	µg/L	0.37	0.17	1.12	29 <sup>(8)</sup>	1.12 <sup>(8)</sup>	--	--	--	15	No
Lead, Total Recoverable <sup>(5)</sup>	µg/L	0.37	0.17	3.68	85 <sup>(9)</sup>	3.68 <sup>(9)</sup>	--	--	--	15	No
Manganese	µg/L	50	50	50	--	--	--	--	--	50	Yes
Mercury	µg/L	0.0091	0.0021	0.05	1.4	0.77	0.05	--	--	1.2 <sup>(13)</sup>	No
MBAS	µg/L	120	ND	500	--	--	--	--	--	500	No
MTBE	µg/L	0.6	0.5	5	--	--	--	--	--	5	No
Nickel, Total Recoverable <sup>(2)</sup>	µg/L	1.8	1.2	26	234 <sup>(8)</sup>	26 <sup>(8)</sup>	610	4,600	--	100	No
Nickel, Total Recoverable	µg/L	1.8	1.2	26	234 <sup>(10)</sup>	26 <sup>(10)</sup>	610	4,600	--	100	No
Nitrate (as N)	µg/L	5,900	760	10,000	--	--	--	--	--	10,000	No
Nitrate (as NO <sub>3</sub> )	µg/L	56,000	NA	45,000	--	--	--	--	--	45,000	Yes

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
2-Nitrophenol	µg/L	0.026	ND	150	150 <sup>(1)</sup>	--	--	--	--	290 <sup>(14)</sup>	No
Phenanthrene	µg/L	0.03	ND	NA	--	--	--	--	--	--	No
Phosphorus	µg/L	2,600	ND	0.14 <sup>(15)</sup>	--	--	--	--	--	0.14 <sup>(7)(15)</sup>	No
Silver, Total Recoverable <sup>(2)</sup>	µg/L	1.2	ND	0.99	0.99 <sup>(8)</sup>	--	--	--	--	100	Yes
Silver, Total Recoverable <sup>(5)</sup>	µg/L	1.2	ND	5.39	5.39 <sup>(9)</sup>	--	--	--	--	100	No
Specific Conductance (EC)	µmhos/cm	442	244	900	--	--	--	--	--	900	No
Sulfide	mg/L	5	ND	NA	--	--	--	--	--	--	No
Sulfite	mg/L	3.2	ND	NA	--	--	--	--	--	--	No
Tetrachloroethene	µg/L	1.5	ND	0.8	--	--	0.8	--	--	5	Yes
Thallium, Total Recoverable	µg/L	0.1	0.5	1.7	--	--	1.7	6.3	--	2	No
Total Dissolved Solids	µg/L	313,000	152,000	500,000	--	--	--	--	--	500,000	No
Total Residual Chlorine	µg/L	400	24	11	19 <sup>(1)</sup>	11 <sup>(1)</sup>	--	--	--	--	Yes
2,4,6-Trichlorophenol	µg/L	0.54	ND	2	--	970 <sup>(1)</sup>	2.1	6.5	--	2 <sup>(1)</sup>	No
Zinc, Total Recoverable <sup>(2)</sup>	µg/L	100	3	59.8	59.8 <sup>(8)</sup>	59.8 <sup>(8)</sup>	--	--	--	5,000	Yes
Zinc, Total Recoverable <sup>(5)</sup>	µg/L	100	3	59.8	59.8 <sup>(10)</sup>	59.8 <sup>(10)</sup>	--	--	--	5,000	Yes

General Note: All inorganic concentrations are given as a total recoverable.

MEC = Maximum Effluent Concentration

B = Maximum Receiving Water Concentration or lowest detection level, if non-detect

C = Criterion used for Reasonable Potential Analysis

CMC = Criterion Maximum Concentration (CTR criterion unless otherwise noted)

CCC = Criterion Continuous Concentration (CTR criterion unless otherwise noted)

Water & Org = Water and Organism Criterion Concentration (CTR or NTR)

Basin Plan = Numeric Site-specific Basin Plan Water Quality Objective

MCL = Drinking Water Standards Maximum Contaminant Level

NA = Not available

ND = Reported as non-detect

Footnotes:

(1) USEPA National Recommended Ambient Water Quality Standard

(2) Assuming an effluent dominated condition in the downstream receiving water because all discharges do not receive 20:1 dilution

(3) Salmonids present and maximum permitted effluent pH of 8.0

(4) ELS present and maximum reported effluent pH of 8.0 and 30-day rolling average temperature of 23.9°C

(5) Assuming no effluent dominated condition because all discharges are required to receive 20:1 dilution

(6) ELS present and maximum reported downstream receiving water pH of 8.2 and 30-day rolling average temperature of 21.6°C

(7) USEPA IRIS Reference Dose

(8) Calculated using the lowest recorded effluent hardness value of 44 mg/L

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
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(9) Calculated according to the Emerick method for calculating concave upward metal criteria based on hardness using the minimum reported effluent hardness value of 44 mg/L and the maximum reported receiving water hardness value of 118 mg/L  
 (10) Calculated according to the Emerick method for calculating concave upward metal criteria based on hardness using the minimum reported effluent hardness value of 44 mg/L  
 (11) CA Department of Fish and Game Water Quality Criteria  
 (12) CA CHS action level for drinking Water  
 (13) CA Public Health Goal  
 (14) NAS SNARL (12) Taste and Odor threshold  
 (15) Applicable to white phosphorus only

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